



OWNER'S MANUAL

M1994D
M2094D
M2294D

Please read this manual carefully before operating your set.

Retain it for future reference.

Record model number and serial number of the set. See the label attached on the back cover and quote this information to your dealer when you require service.



Digital Video
Broadcasting

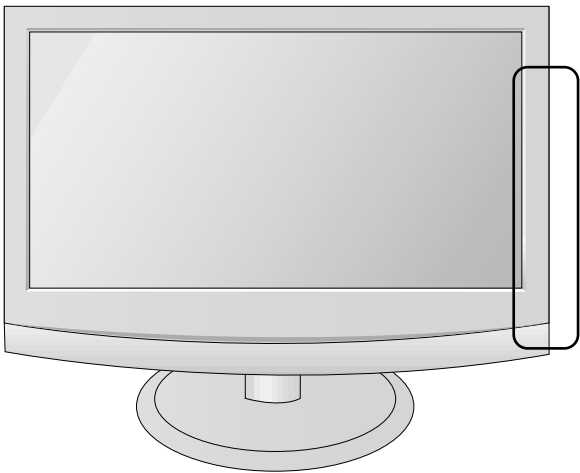
Trade Mark of the DVB Digital Video
Broadcasting Project (1991 to 1996)

ID Number(s): 5573 : M1994D
5574 : M2094D
5575 : M2294D

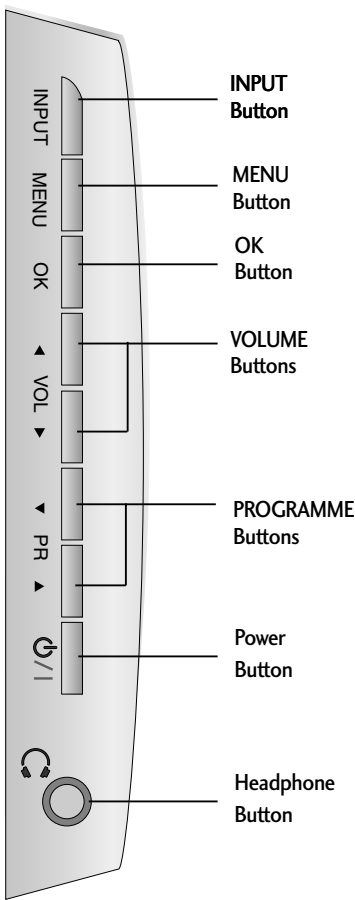
PREPARATION

FRONT PANEL CONTROLS

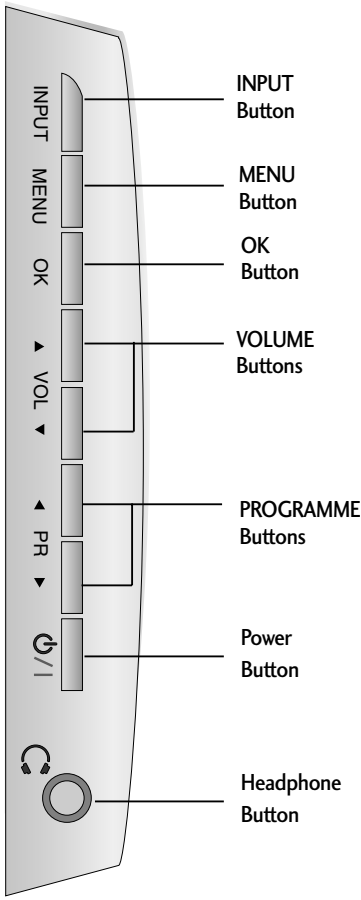
- This is a simplified representation of the front panel. The image shown may be somewhat different from your set.



A Type



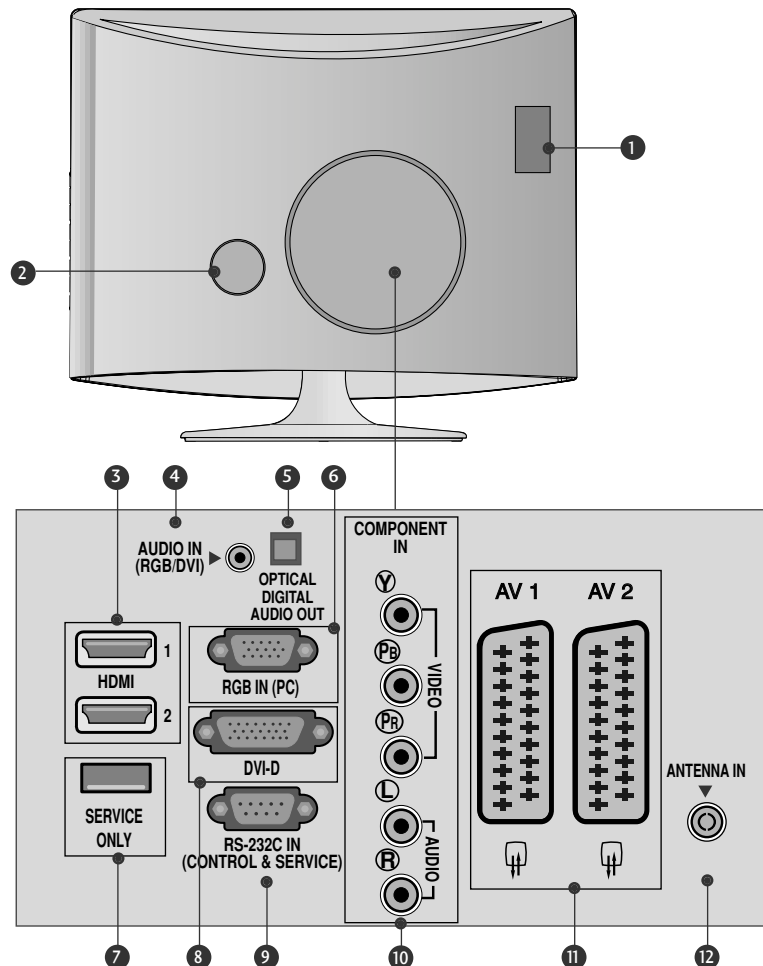
B Type



PREPARATION

BACK PANEL INFORMATION

- This is a simplified representation of the back panel. The image shown may be somewhat different from your set.



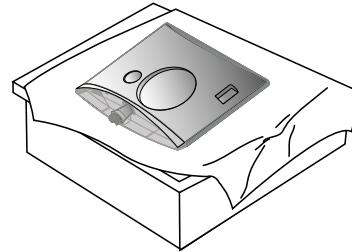
- 1 PCMCIA (Personal Computer Memory Card International Association) Card Slot
(This feature is not available in all countries.)
- 2 Power Cord Socket
This set operates on AC power. The voltage is indicated on the Specifications page. Never attempt to operate the set on DC power.
- 3 HDMI Input
Connect a HDMI signal to HDMI IN.
Or DVI (VIDEO) signal to HDMI IN with DVI to HDMI cable.
- 4 RGB/DVI Audio Input
Connect the audio from a PC.
- 5 Optical Digital Audio Out
Connect digital audio from various types of equipment
- 6 RGB INPUT (PC)
Connect the output from a PC.
- 7 SERVICE ONLY PORT
- 8 DVI-D Input
Connect the output from a PC.
- 9 RS-232C IN (CONTROL & SERVICE) PORT
Connect to the RS-232C port on a PC.
- 10 Component Input
Connect a component video/audio device to these jacks.
- 11 Euro Scart Socket (AV1/AV2)
Connect scart socket input or output from an external device to these jacks.
- 12 Antenna Input
Connect over-the-air signals to this jack.

PREPARATION

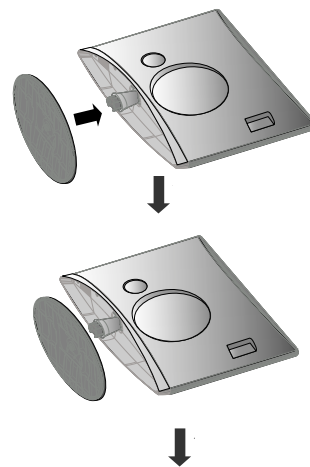
STAND INSTALLATION

■ The image shown may be somewhat different from your set.

- 1 Carefully place the product screen side down on a cushioned surface that will protect product and screen from damage.

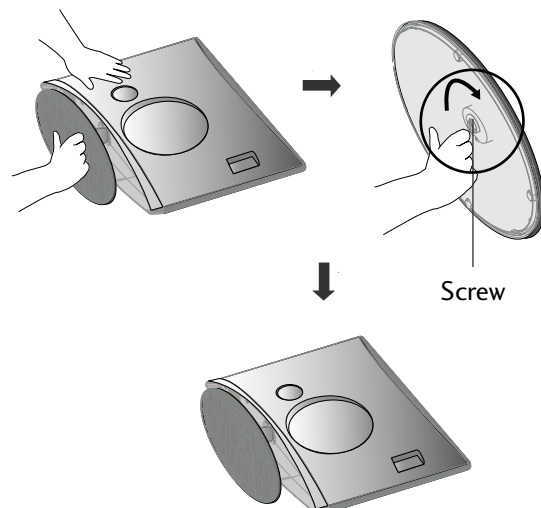


- 2 Insert the **stand base** into the product



- 3 Attach the monitor to the Stand Base by turning the screw to the right.

* Turn the screw by using the screw handle

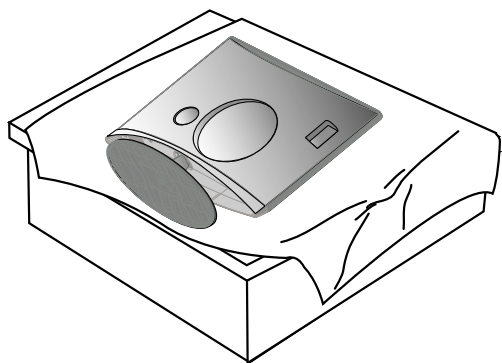


PREPARATION

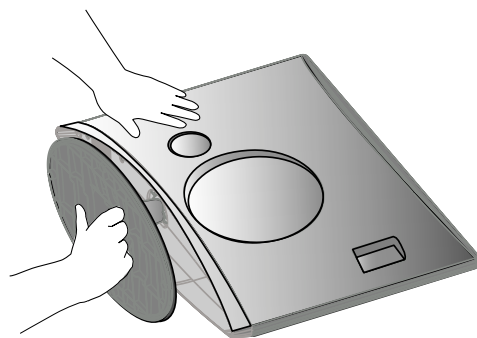
DETACHING STAND

■ The image shown may be somewhat different from your set.

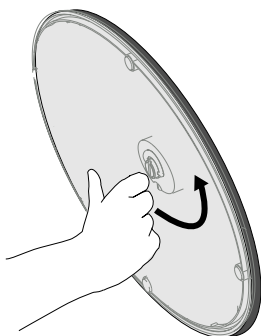
- 1** Place the set screen side down on a cushion or soft cloth.



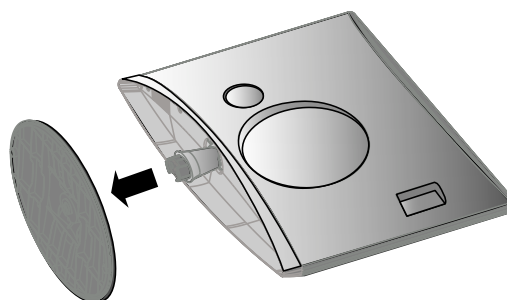
- 2** Detach the monitor to the Stand Base by turning the screw to the left.



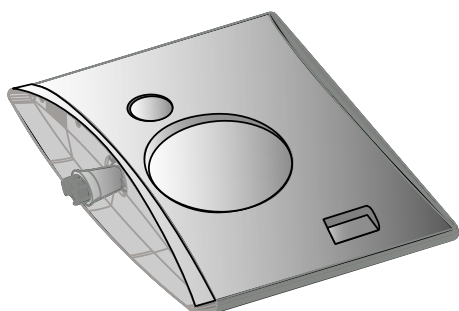
- 3** Turn the screw by using the screw handle



- 4** Pull the stand base.



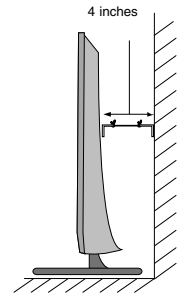
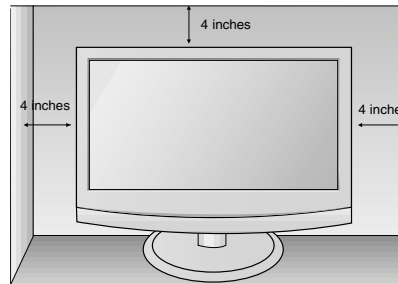
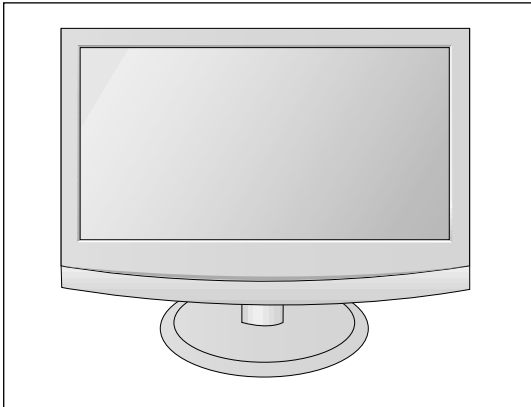
- 5**



PREPARATION

DESKTOP PEDESTAL INSTALLATION

For proper ventilation, allow a clearance of 4 inches on each side and from the wall.



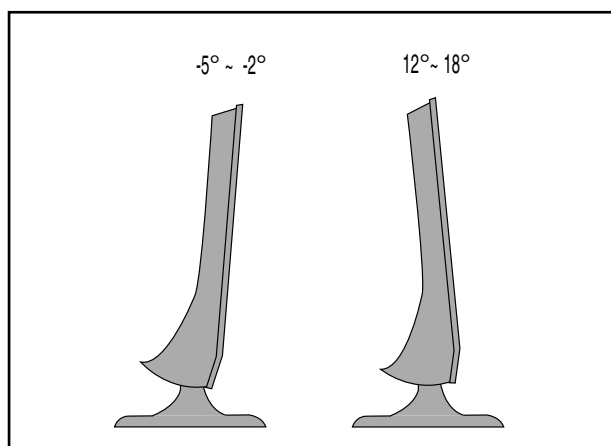
PREPARATION

POSITIONING YOUR DISPLAY

- The image shown may be somewhat different from your set.

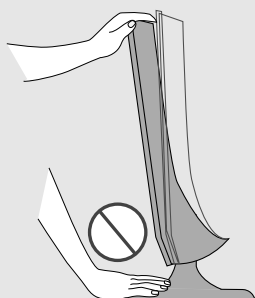
Adjust the position of the panel in various ways for maximum comfort.

- **Tilt range**



LOCATION

Position your set so that no bright light or sunlight falls directly onto the screen. Care should be taken not to expose the set to any unnecessary vibration, moisture, dust or heat. Also, ensure that the set is placed in a position to allow a free flow of air. Do not cover the ventilation openings on the back cover.



Warning:

When adjusting the angle of the screen, do not put your finger(s) in between the head of the monitor and the stand body. You can hurt your finger(s).

PREPARATION

KENSINGTON SECURITY SYSTEM

- The product is equipped with a Kensington Security System connector on the back panel. Connect the Kensington Security System cable as shown below.
- For detailed installation and use of the Kensington Security System, refer to the user's guide provided with the Kensington Security System.

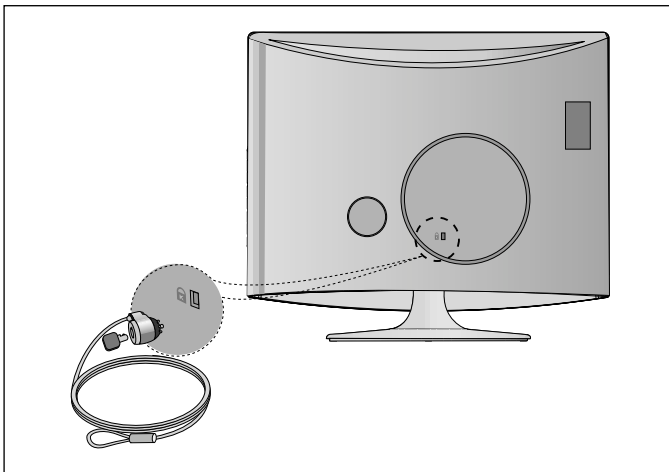
For further information, contact <http://www.kensington.com>, the internet homepage of the Kensington company. Kensington sells security systems for expensive electronic equipment such as notebook PCs and LCD projectors.

NOTE

- The Kensington Security System is an optional accessory.

NOTES

- If the product feels cold to the touch, there may be a small "flicker" when it is turned on.
This is normal, there is nothing wrong with product.
- Some minute dot defects may be visible on the screen, appearing as tiny red, green, or blue spots.
However, they have no adverse effect on the monitor's performance.
- Avoid touching the LCD screen or holding your finger(s) against it for long periods of time.
Doing so may produce some temporary distortion effects on the screen.

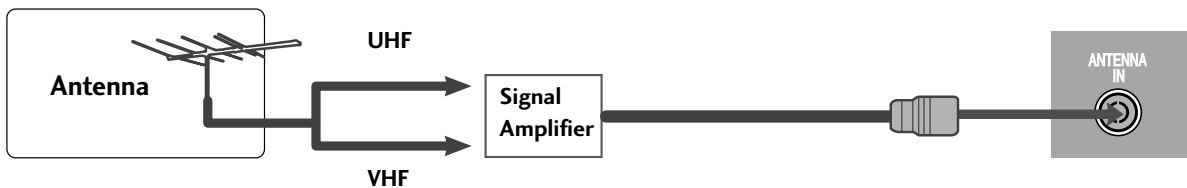
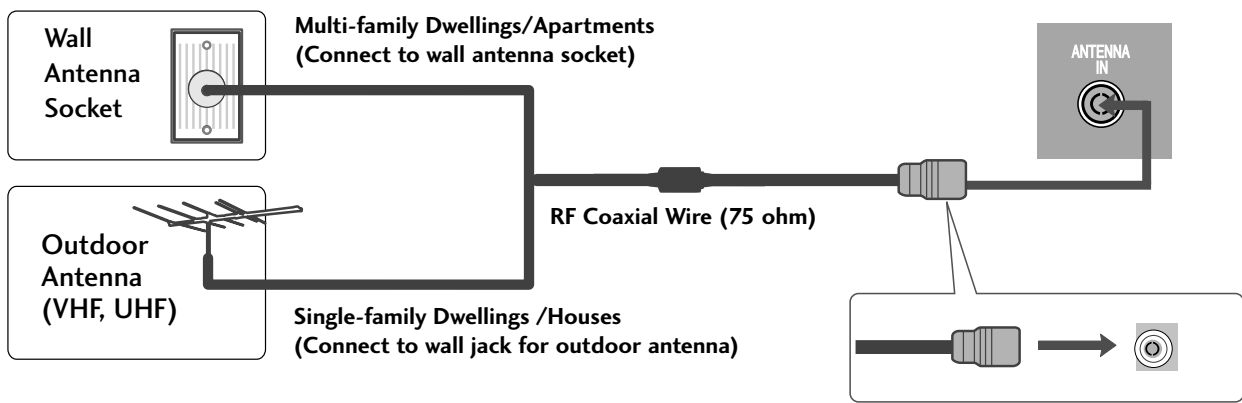


PREPARATION

- To prevent equipment damage, never plug in any power cords until you have finished connecting all equipment.

ANTENNA CONNECTION

- For optimum picture quality, adjust antenna direction.
- An antenna cable and converter are not supplied.



- In poor signal areas, to get better picture quality, install a signal amplifier to the antenna as shown above.
- If signal needs to be split for two TVs, use an antenna signal splitter for connection.

EXTERNAL EQUIPMENT SETUP

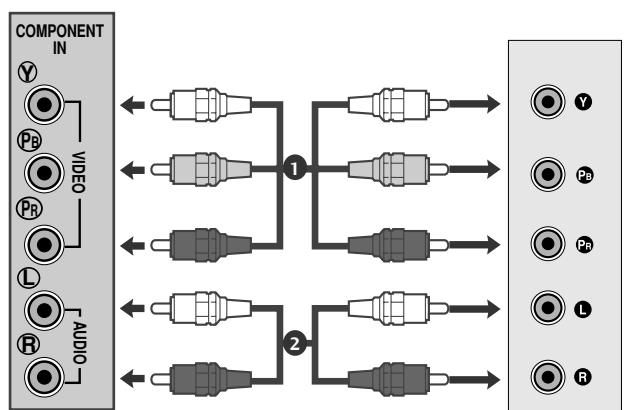
- To prevent the equipment damage, never plug in any power cords until you have finished connecting all equipment.
- The image shown may be somewhat different from your set.

HD RECEIVER SETUP

When connecting with a component cable

- 1 Connect the SET-TOP outputs to the **COMPONENT IN VIDEO** sockets (Y Pb Pr) on the set.
- 2 Connect the audio cable from the SET-TOP to **COMPONENT IN AUDIO** sockets of the set.
- 3 Press the **INPUT** button to select **Component**.

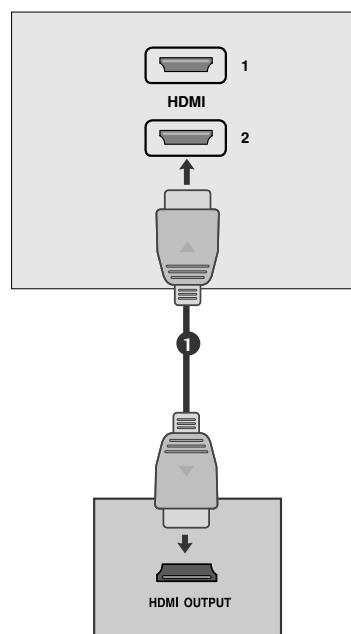
| Signal | Component | HDMI |
|------------|-----------|------|
| 480i/576i | Yes | No |
| 480p/576p | Yes | Yes |
| 720p/1080i | Yes | Yes |
| 1080p | Yes | Yes |



EXTERNAL EQUIPMENT SETUP

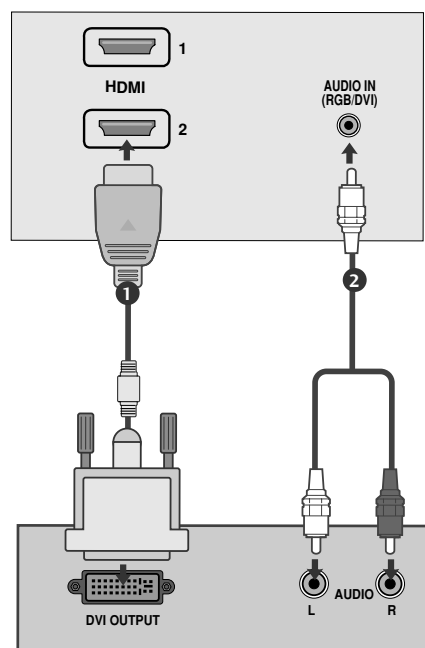
When connecting with a HDMI

- 1 Connect the HDMI output of the digital set-top box to the **HDMI IN** jack on the set.



When connecting with a HDMI to DVI cable

- 1 Connect the digital set-top box to **HDMI IN** jack on the set.
- 2 Connect the audio output of the digital set-top box to the **AUDIO IN (RGB/DVI)** jack on the set.
- 3 Turn on the digital set-top box. (Refer to the owner's manual for the digital set-top box.)



EXTERNAL EQUIPMENT SETUP

DVD SETUP

When connecting with a component cable

- 1

Connect the video output sockets (Y P_B P_R) of the DVD to the **COMPONENT IN VIDEO** sockets (Y P_B P_R) of the set.
- 2

Connect the audio cable from the DVD to **COMPONENT IN AUDIO** sockets of the set.
- 3

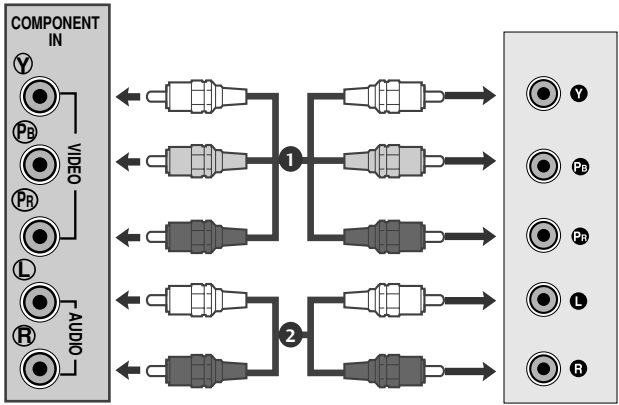
Press the **INPUT** button to select **Component**.
- 4

Press the **PLAY** button on the DVD.
The DVD playback picture appears on the screen.

Component Input ports

To get better picture quality, connect a DVD player to the component input ports as shown below.

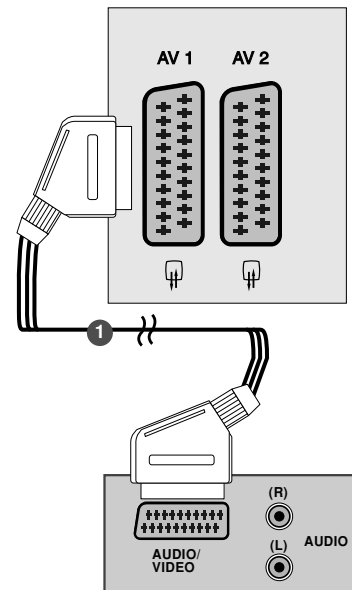
| | | | |
|-------------------------------------|---|----------------|----------------|
| Component ports on the set | Y | P _B | P _R |
| Video output ports on DVD player | Y | P _B | P _R |
| | Y | B-Y | R-Y |
| | Y | Cb | Cr |
| | Y | Pb | Pr |



EXTERNAL EQUIPMENT SETUP

When connecting with a Euro Scart

- 1** Connect the Euro scart socket of the DVD to the Euro scart socket of the set.
- 2** Press the **INPUT** button to select **AV1**.
If connected to **AV2** Euro scart socket, select **AV2** input source.
- 3** Press the **PLAY** button on the DVD.
The DVD playback picture appears on the screen.

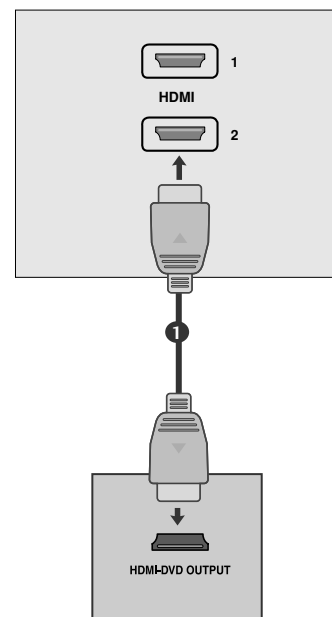


! NOTE

- ▶ Signal type RGB, i.e. the signals red, green and blue can only be selected for the Euro scart and the AV 1 can be received. These signals are transmitted, for example, by a paid TV decoder, game machine or photo CD unit, etc.
- ▶ Please use shielded scart cable.

When connecting HDMI cable

- 1** Connect the HDMI output of the DVD to the **HDMI IN** jack on the set.



! NOTE

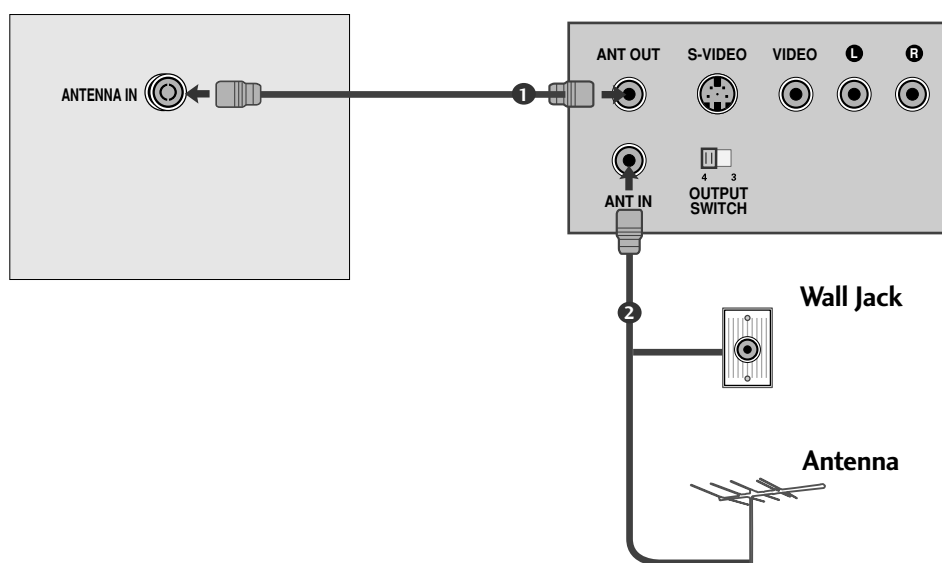
- ▶ Set can receive the video and audio signal simultaneously by using a HDMI cable.
- ▶ If the DVD player does not support Auto HDMI, you need to set the DVD output resolution appropriately.

EXTERNAL EQUIPMENT SETUP

VCR SETUP

- To avoid picture noise (interference), leave an adequate distance between the VCR and set.
- Typically a still picture is shown on the VCR. If a user uses 4:3 picture format for a long time, an afterimage may remain on the sides of the screen.

When connecting with an antenna



- 1 Connect the RF out socket of the VCR to the aerial socket of the set.
- 2 Connect the aerial cable to the RF aerial in socket of the VCR.
- 3 Store the VCR channel on a desired programme number using the 'Manual programme tuning' section.
- 4 Select the programme number where the VCR channel is stored.
- 5 Press the **PLAY** button on the VCR.

EXTERNAL EQUIPMENT SETUP

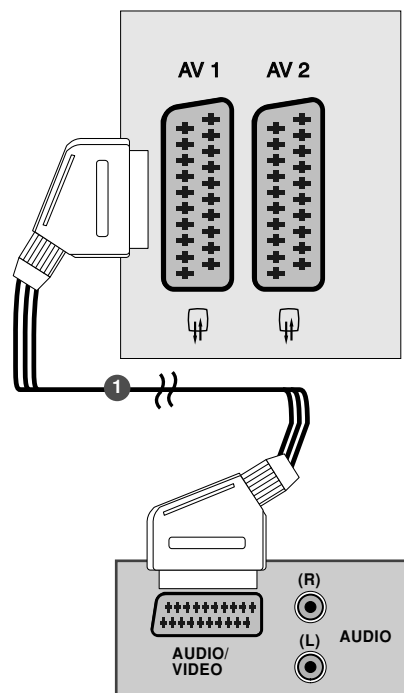
When connecting with a Euro Scart

1 Connect the Euro scart socket of the VCR to the Euro scart socket of the set.

2 Press the **PLAY** button on the VCR.
If your VCR outputs an AV switching signal via the Scart lead, the set will auto switch to **AV 1** mode on start of playback, but if you want to keep on watching in TV mode, press the **▲ / ▼** or **NUMBER** buttons.
If connected to **AV2** Euro scart socket, select **AV2** input source.

Otherwise press the **INPUT** button on the remote control handset to select **AV 1**. The VCR playback picture appears on the screen.

You can also record programmes received by the set on video tape.



! NOTE

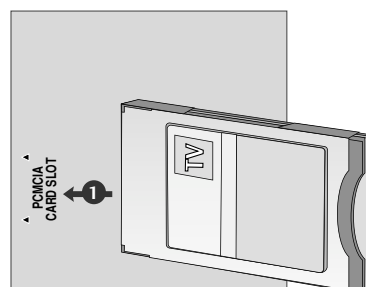
- ▶ Signal type RGB, i.e. the signals red, green and blue can only be selected for the Euro scart and the AV 1 can be received. These signals are transmitted, for example, by a paid TV decoder, game machine or photo CD unit, etc.
- ▶ Please use shielded scart cable.

INSERTION OF CI MODULE

- To view the scrambled (paid) services in digital TV mode.
- This feature is not available in all countries.

1 Insert the CI Module to **PCMCIA** (Personal Computer Memory Card International Association) **CARD SLOT** of set as shown.

For further information, see p. 38.



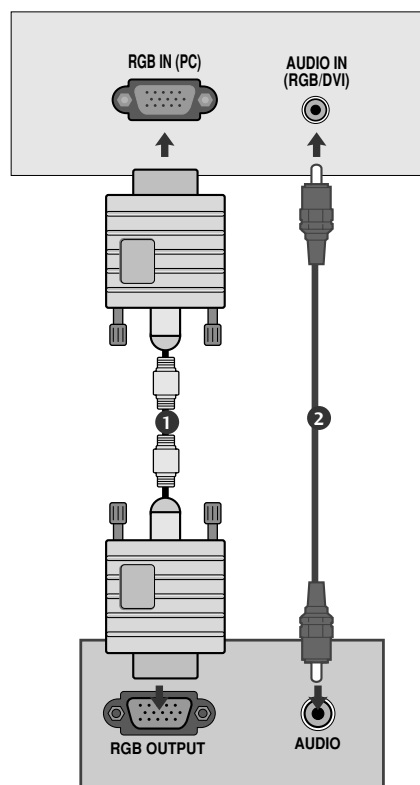
EXTERNAL EQUIPMENT SETUP

PC SETUP

This product provides Plug and Play capability, meaning that the PC adjusts automatically to the set's settings.

When connecting with a D-sub 15 pin cable

- 1 Connect the signal cable from the monitor output socket of the PERSONAL COMPUTER to the PC input socket of the set.
- 2 Connect the audio cable from the PC to the **AUDIO IN (RGB/DVI)** sockets of the set.
- 3 Press the INPUT button to select **RGB**.
- 4 Switch on the PC, and the PC screen appears on the set. The set can be operated as a PC monitor.



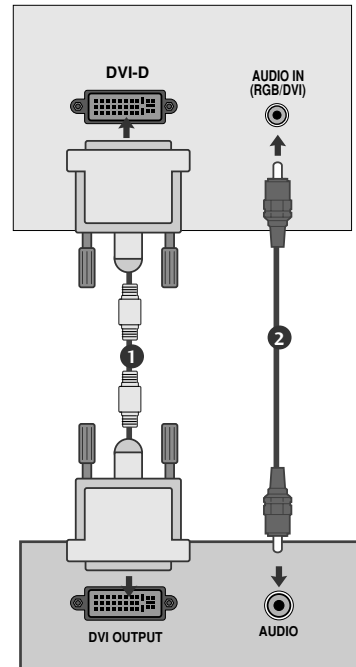
! NOTE

- User must use shielded signal interface cables (D sub 15 pin cable, DVI cable) with ferrite cores to maintain standard compliance for the product.

EXTERNAL EQUIPMENT SETUP

When connecting with a DVI cable

- 1 Connect the DVI output of the PC to the **DVI-D IN** jack on the set.
- 2 Connect the audio cable from the PC to the **AUDIO IN (RGB/DVI)** sockets of the set.

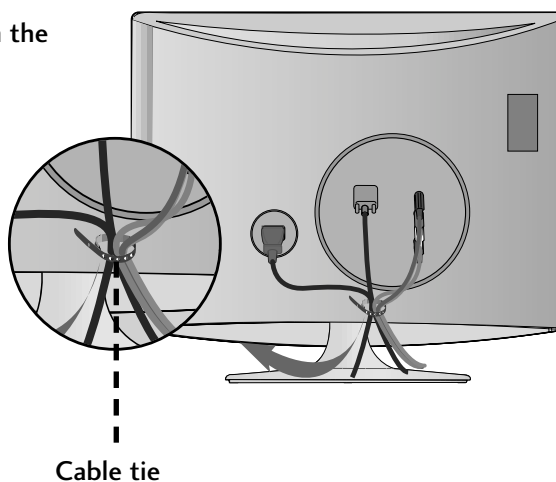


! NOTE

- If the set is cold, there may be a small “flicker” when the set is switched on. This is normal, there is nothing wrong with the set.
- If possible, use the 1680x1050 @ 60 Hz video mode to obtain the best image quality for your LCD monitor. If used with other resolutions, some scaled or processed pictures may appear on the screen. The set has been preadjusted to the mode 1680x1050 @ 60 Hz.
- Some dot defects may appear on the screen, like Red, Green or Blue spots. However, this will have no impact or effect on the monitor performance.
- Do not press the LCD screen with your finger for a long time as this may produce some temporary distortion effects on the screen.
- Avoid keeping a fixed image on the set's screen for prolonged periods of time. The fixed image may become permanently imprinted on the screen; use a screen saver when possible.

BACK COVER FOR WIRE ARRANGEMENT

Tie cables together with a cable tie as shown in the illustration.



EXTERNAL EQUIPMENT SETUP

RGB/DVI[PC]

| Resolution | Horizontal Frequency(kHz) | Vertical Frequency(Hz) |
|------------|---------------------------|------------------------|
| 720x400 | 31.468 | 70 |
| 640x480 | 31.469 | 60 |
| | 37.500 | 75 |
| 800x600 | 37.879 | 60 |
| | 46.875 | 75 |
| 1024x768 | 48.363 | 60 |
| | 60.123 | 75 |
| 1152x864 | 67.500 | 75 |
| 1280x1024 | 63.981 | 60 |
| | 79.976 | 75 |
| 1680x1050 | 64.674 | 60 |
| | 65.290 | 60 |

HDMI[DTV] supported mode

| Resolution | Horizontal Frequency(kHz) | Vertical Frequency(Hz) |
|---------------|---------------------------|------------------------|
| 720x480/60p | 31.47 | 60 |
| | 31.5 | 60 |
| 720x576/50p | 31.25 | 50 |
| 1280x720/50p | 37.5 | 50 |
| 1280x720/60p | 44.96 | 60 |
| | 45 | 60 |
| 1920x1080/60i | 33.72 | 60 |
| | 33.75 | 60 |
| 1920x1080/50i | 28.125 | 50 |
| 1920x1080/50p | 56.25 | 50 |
| 1920x1080/60p | 67.43 | 60 |
| | 67.5 | 60 |

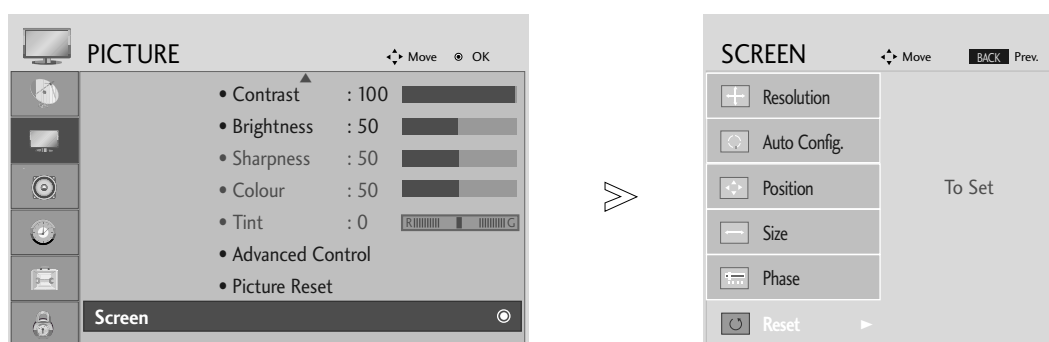
EXTERNAL EQUIPMENT SETUP










SCREEN SETUP FOR PC MODE

Screen Reset

Returns Position, Size and Phase to the default factory settings.

This function works in the following mode: RGB[PC].



- 1   Select **PICTURE**.
- 2   Select **SCREEN**.
- 3   Select **Reset**.
- 4   Select **Yes**.
- 5  Run **Reset**.

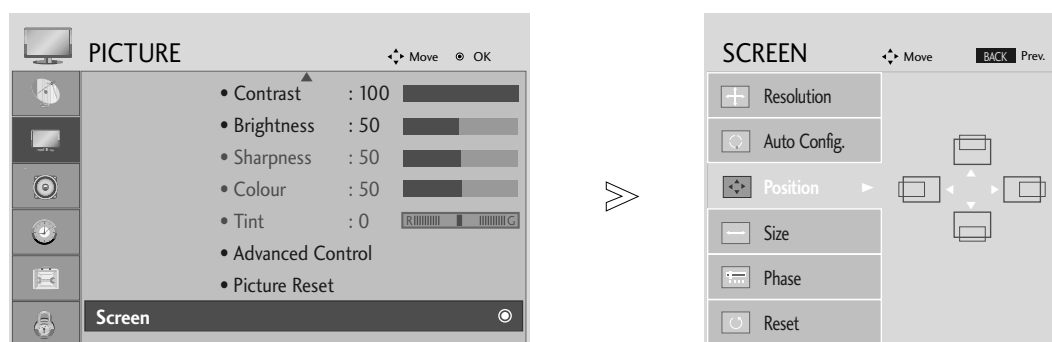
- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.










EXTERNAL EQUIPMENT SETUP

Adjustment for screen Position, Size, Phase

If the picture is not clear after auto adjustment and especially if characters are still shaky, adjust the picture phase manually.

This function works in the following mode: RGB[PC].



- 1   Select **PICTURE**.
- 2   Select **SCREEN**.
- 3   Select **Position, Size or Phase**.
- 4    Make appropriate adjustments.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

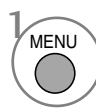


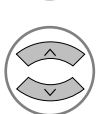

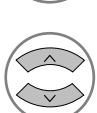

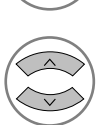
EXTERNAL EQUIPMENT SETUP

Selecting Resolution

To view a normal picture, match the resolution of RGB mode and selection of PC mode.

This function works in the following mode: RGB[PC] mode.



- 1   Select **PICTURE**.
- 2   Select **SCREEN**.
- 3   Select **Resolution**.
- 4   Select the desired resolution.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

EXTERNAL EQUIPMENT SETUP

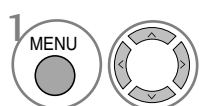
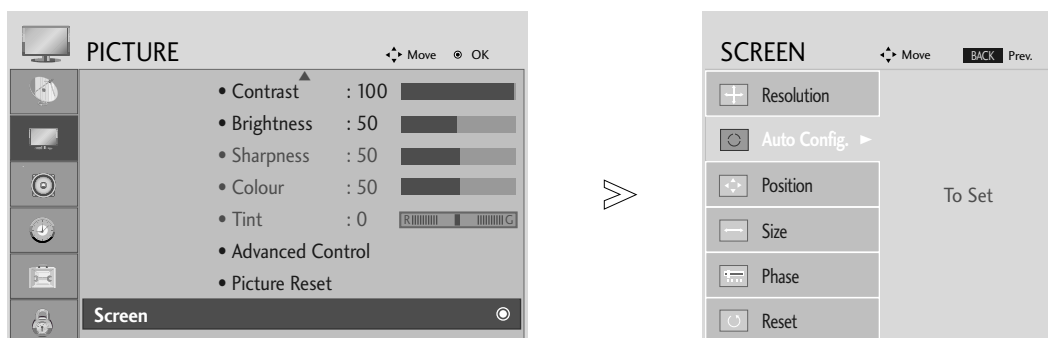
Auto Configure (RGB [PC] mode only)

Automatically adjusts picture position and minimizes image instability. After adjustment, if the image is still not correct, your set is functioning properly but needs further adjustment.

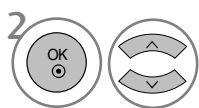
Auto configure

This function is for automatic adjustment of the screen position, clock, and phase. The displayed image will be unstable for a few seconds while the auto configuration is in progress.

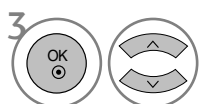
1. Using OSD



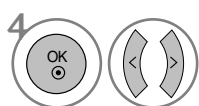
Select PICTURE.



Select SCREEN.



Select Auto Config.



Select Yes.

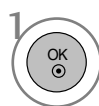


Run Auto Config.

- If the position of the image is still not correct, try Auto adjustment again.
- If picture needs to be adjusted again after Auto adjustment in RGB (PC), you can adjust the **Position, Size or Phase**.

2. Using OK(Remocon or control key)

This function is available for RGB signals only.



Press OK.

Auto Config. ► OK

- If you don't want Auto Configure, do not press OK



Press OK.

Auto in progress
<1680 x 1050 Resolution>

Auto in progress
For optimal display
change resolution 1680 x 1050
<Others Resolution>

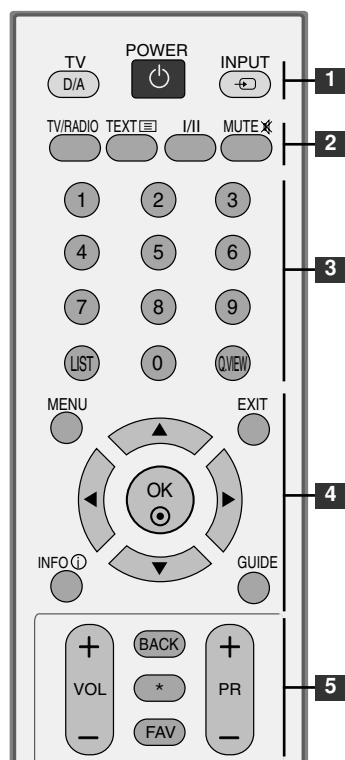
- Press the MENU or EXIT button to close the menu window.
- Press the BACK button to move to the previous menu screen.

WATCHING TV /PROGRAMME CONTROL

REMOTE CONTROL KEY FUNCTIONS

When using the remote control, aim it at the remote control sensor on the set.

A Type



- 1** **POWER** Switches the set on off.
- TV** A type : Selects digital or analogue TV mode.
TV/PC B type : Selects TV or PC mode.
 Switches the set on.
- INPUT** External input mode rotates in regular sequence.
 Switches the set on.

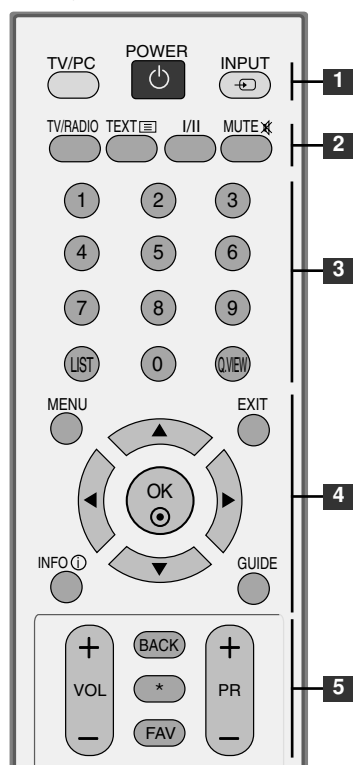
- 2** **TV/RADIO** Selects Radio or TV channel.
- I/II** Selects the sound output.(Refer to the p.60,61)
- MUTE** Switches the sound on or off.

- 3** **0~9 number button** Selects a programme.
 Selects numbered items in a menu.
- LIST** Displays the programme table.(Refer to the p.39)
- Q.VIEW** Returns to the previously viewed programme.

- 4** **MENU** Selects a menu.(Refer to the p.27)
- EXIT** Clears all on-screen displays.
- INFO ⓘ** Shows the present screen information.
- GUIDE** Shows programme schedule.(Refer to the p.40~42)
- THUMBSTICK** (Up/Down/Left Right) Allows you to navigate the on-screen menus and adjust the system settings to your preference.
- OK** Accepts your selection or displays the current mode.

- 5** **VOLUME UP /DOWN** Adjusts the volume.
- BACK** Allows the user to move back one step in an interactive application, EPG or other user interaction function.
- *** No function
- FAV** Displays the selected favourite programme.(Refer to the p.33)
- Programme UP/DOWN** Selects a programme.

B Type

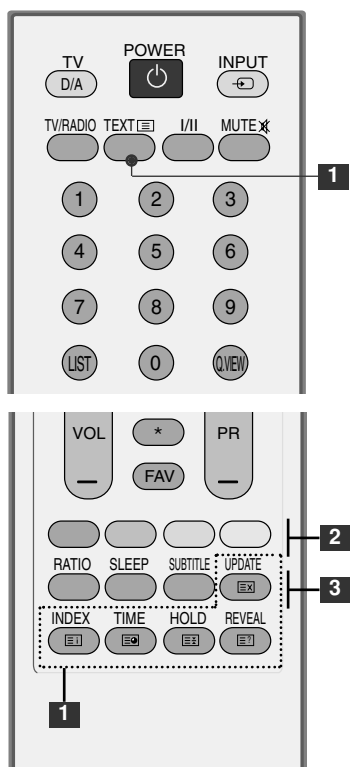


- 1** **TV/PC** Selects TV or PC mode.
- 2** **TV/RADIO** Selects Radio or TV channel.
- I/II** Selects the sound output.(Refer to the p.60,61)
- MUTE** Switches the sound on or off.
- 3** **0~9 number button** Selects a programme.
 Selects numbered items in a menu.
- LIST** Displays the programme table.(Refer to the p.39)
- Q.VIEW** Returns to the previously viewed programme.
- 4** **MENU** Selects a menu.(Refer to the p.27)
- EXIT** Clears all on-screen displays.
- INFO ⓘ** Shows the present screen information.
- GUIDE** Shows programme schedule.(Refer to the p.40~42)
- THUMBSTICK** (Up/Down/Left Right) Allows you to navigate the on-screen menus and adjust the system settings to your preference.
- OK** Accepts your selection or displays the current mode.

- 5** **VOLUME UP /DOWN** Adjusts the volume.
- BACK** Allows the user to move back one step in an interactive application, EPG or other user interaction function.
- *** No function
- FAV** Displays the selected favourite programme.(Refer to the p.33)
- Programme UP/DOWN** Selects a programme.

WATCHING TV /PROGRAMME CONTROL

A Type



1 TELETEXT BUTTONS These buttons are used for teletext. For further details, see the 'Teletext' section. (Refer to the p.76~78)

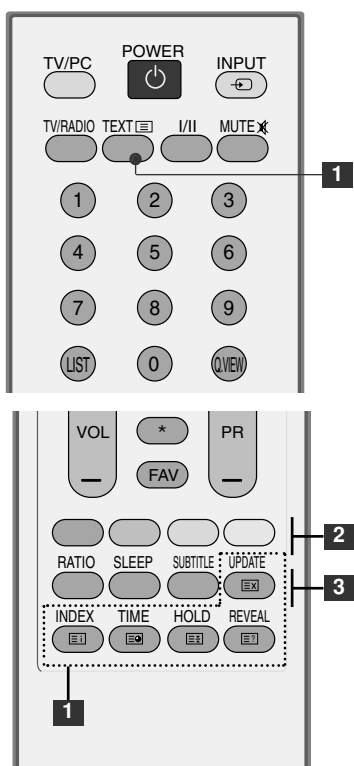
2 Colour buttons These buttons are used for teletext (only **TELETEXT** models) or **Programme edit**. (Refer to the p.33,34,40~42,78)

3 RATIO Selects your desired picture format. (Refer to the p.43,44)

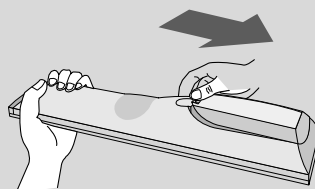
SLEEP Sets the sleep timer. (Refer to the p.67)

SUBTITLE Recalls your preferred subtitle in digital mode.

BType



Installing Batteries



- Open the battery compartment cover on the back and install the batteries matching correct polarity (+ with +, - with -).
- Install two 1.5V AAA batteries. Don't mix old or used batteries with new ones.
- Close cover.

WATCHING TV /PROGRAMME CONTROL

TURNING ON THE TV

- If your TV is turned on, you will be able to use its features.

- 1 First, connect power cord correctly.
- 2 Turn on power by pressing the power button on the product.
- 3 Press the TV button on the remote control.
- 4 Set the channel by using the PR+ / - buttons or number buttons on the remote control.

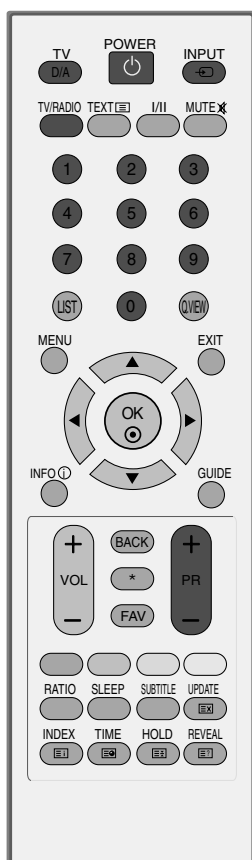
Initializing setup

If the OSD (On Screen Display) is displayed on the screen as figure after turning on the set, you can adjust the Language, Country, Time Zone, Auto programme tuning.

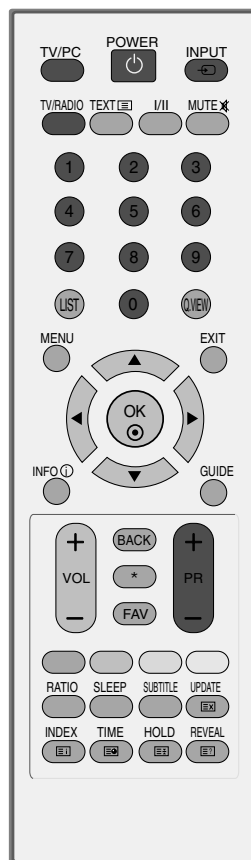
Note:

- a. It will automatically disappear after approx. 40 seconds unless a button is pressed.
- b. Press the **BACK** button to change current OSD into previous OSD.

A Type



B Type



WATCHING TV /PROGRAMME CONTROL

PROGRAMME SELECTION

- 1 Press the **PR +** or **-** or **NUMBER** buttons to select a programme number.

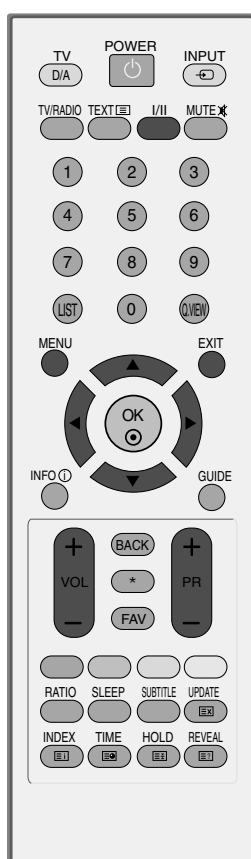
VOLUME ADJUSTMENT

- 1 Press the **VOL +** or **-** button to adjust the volume.

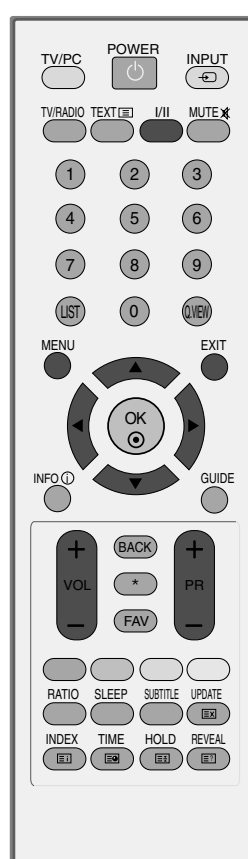
If you want to switch the sound off, press the **MUTE** button.

You can cancel this function by pressing the **MUTE**, **VOL +** or **-**, or **I/II** button.

A Type



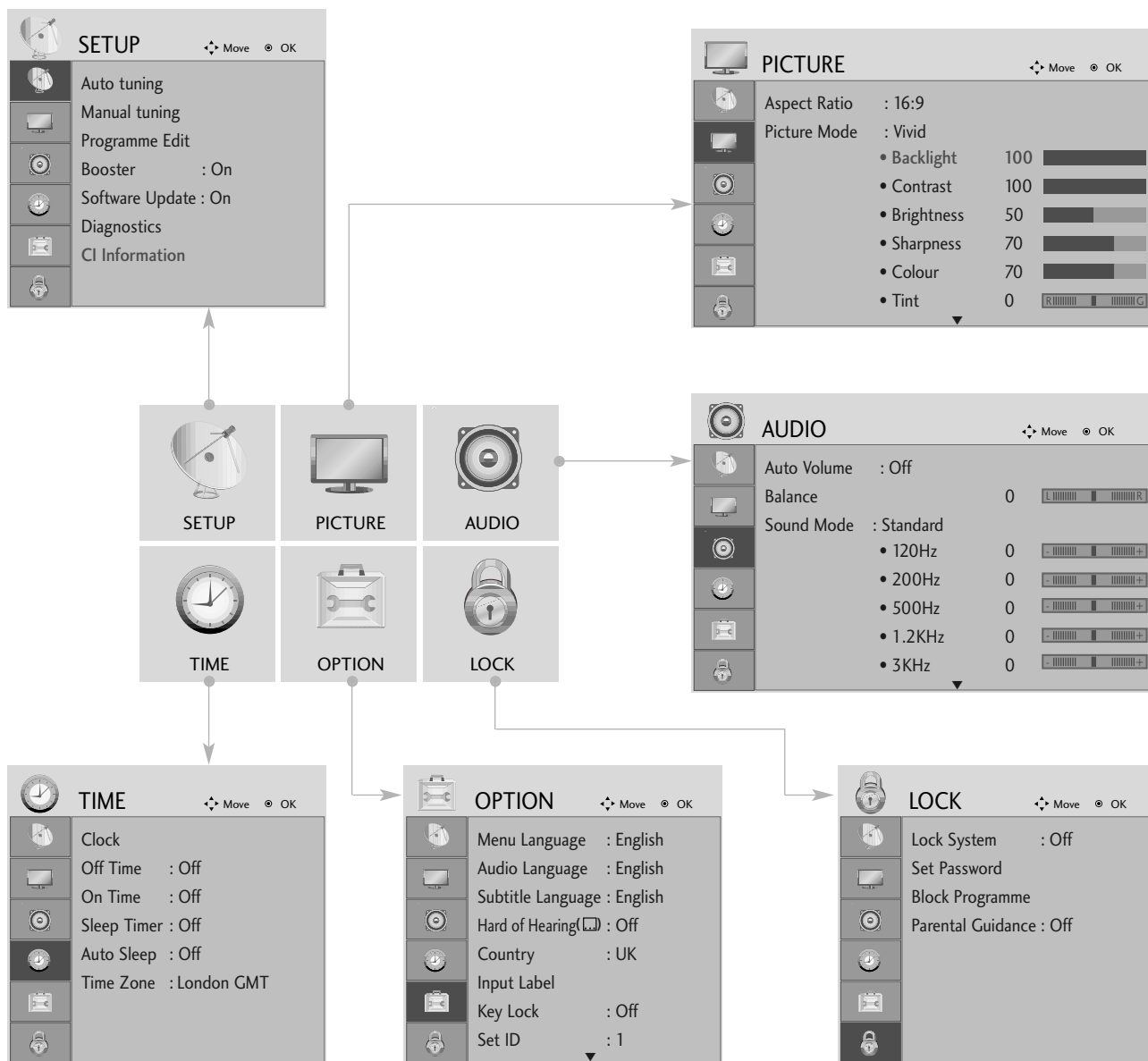
B Type








WATCHING TV /PROGRAMME CONTROL

ON SCREEN MENUS SELECTION AND ADJUSTMENT

Your set's OSD (On Screen Display) may differ slightly from what is shown in this manual.



- 1   Display each menu.
- 2   Select a menu item.
- 3  Move to the pop up menu.

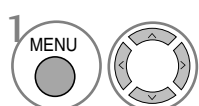
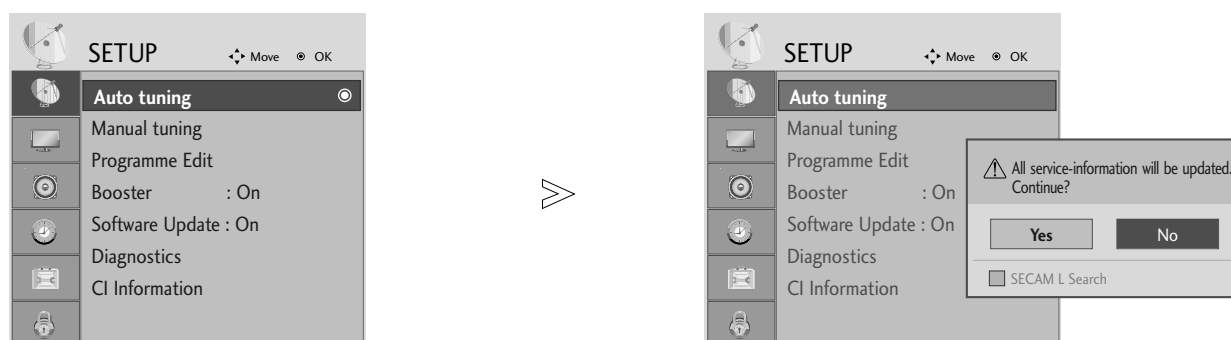
- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

WATCHING TV /PROGRAMME CONTROL

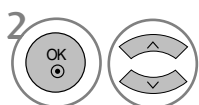
AUTO PROGRAMME TUNING

Use this to automatically find and store all available programmes.

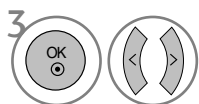
When you start auto programming in digital mode, all previously stored service information will be deleted.



Select **SETUP**.



Select **Auto Tuning**.



Select **Yes**.



Run **Auto tuning**.

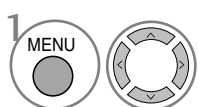
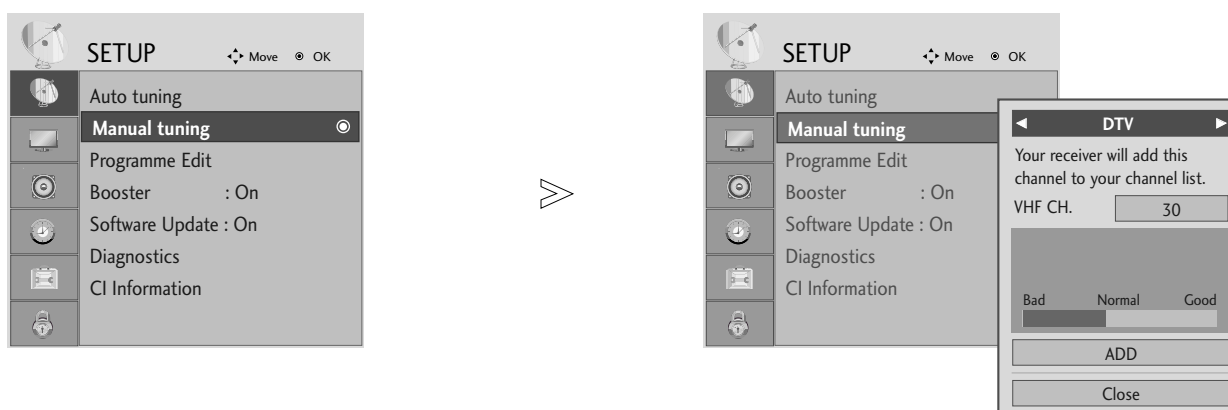
- Use **NUMBER** buttons to input a 4-digit password in **Lock System 'On'**.
- If you wish to keep on auto tuning, select **YES** using the ◀ ▶ button. Then, press the **OK** button. Otherwise, select **NO**.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

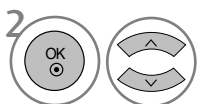
WATCHING TV /PROGRAMME CONTROL

MANUAL PROGRAMME TUNING (IN DIGITAL MODE)

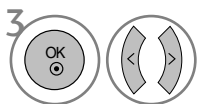
Manual Tuning lets you manually add a programme to your programme list.



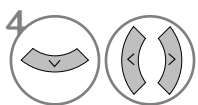
Select **SETUP**.



Select **Manual Tuning**.



Select **DTV**.



Select the desired channel number.

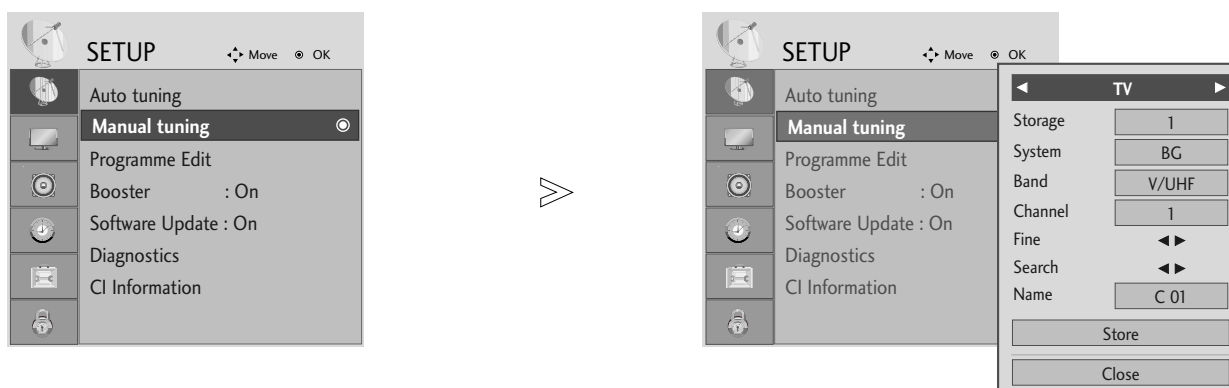
- Use **NUMBER** buttons to input a 4-digit password in **Lock System 'On'**.
















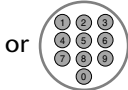




- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

WATCHING TV /PROGRAMME CONTROL

MANUAL PROGRAMME TUNING (IN ANALOGUE MODE)

Manual Tuning lets you manually tune and arrange the stations in whatever order you desire.



- 1   Select **SETUP**.
- 2   Select **Manual Tuning**.
- 3   Select **TV**.
- 4   or  Select the desired programme number on.
- 5   Select a TV system.
- 6   Select **V/UHF** or **Cable**.
- 7   or  Select the desired channel number.
- 8   Start searching.
- 9   Select **Store**.















- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

- Use **NUMBER** buttons to input a 4-digit password in **Lock System 'On'**.
- **L**: SECAM L/L' (France)
- **BG**: PAL B/G, SECAM B/G (Europe / East Europe / Asia / New Zealand / M. East / Africa / Australia)
- **I**: PAL I/II (U.K. / Ireland / Hong Kong / South Africa)
- **DK**: PAL D/K, SECAM D/K (East Europe / China / Africa / CIS)
- To store another channel, repeat steps 4 to 9.

WATCHING TV /PROGRAMME CONTROL











■ Assigning a station name

You can assign a station name with five characters to each programme number.

- | | | | | | | |
|---|---|---|-------------------------------|---|--|--|
| 1 |  |  | Select SETUP . | | | |
| 2 |  |  | Select Manual Tuning . | 5 |   | Select the position and make your choice of the second character, and so on. You can use the alphabet A to Z , the number 0 to 9 , +/ -, and space. |
| 3 |  |  | Select TV . | 6 |   | Select Close . |
| 4 |  |  | Select Name . | 7 |   | Select Store . |

■ Fine Tuning

Normally fine tuning is only necessary if reception is poor.

- | | | | | | | |
|---|---|---|-------------------------------|---|--|---|
| 1 |  |  | Select SETUP . | 4 |  | Select Fine . |
| 2 |  |  | Select Manual Tuning . | 5 |  | Fine tune for the best picture and sound. |
| 3 |  |  | Select TV . | 6 |   | Select Store . |

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

WATCHING TV /PROGRAMME CONTROL

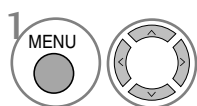
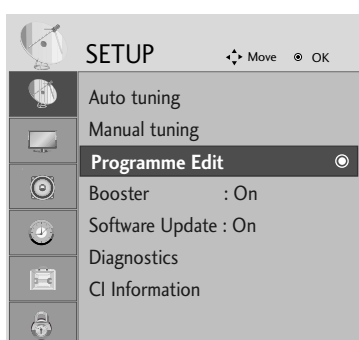
PROGRAMME EDIT

When a programme number is skipped, it means that you will be unable to select it using **PR + / -** button during TV viewing.

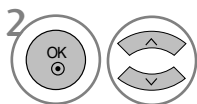
If you wish to select the skipped programme, directly enter the programme number with the **NUMBER** buttons or select it in the Programme edit menu

This function enables you to skip the stored programmes.

In some countries, it is possible to move a programme number by using the **YELLOW** button only.



Select **SETUP**.



Select **Programme Edit**.



Enter the **Programme Edit**.



Select a programme to be stored or skipped.

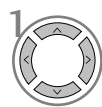


- Use **NUMBER** buttons to input a 4-digit password in **Lock System 'On'**.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

WATCHING TV /PROGRAMME CONTROL


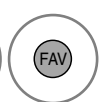
IN DTV/RADIO MODE

■ Skipping a programme number

-  Select a programme number to be skipped.
-  Turn the skipped programme number to blue.
-  Release the skipped programme.

- When a programme number is skipped, it means that you will be unable to select it using the **PR + / -** button during normal TV viewing.
- If you wish to select a skipped programme, directly enter the programme number with the **NUMBER** buttons or select it in the programme edit or EPG.

■ Selecting favourite programme

-   Select your favourite programme number.

- It will automatically include the selected programme into your favourite programme list.

WATCHING TV /PROGRAMME CONTROL

IN TV MODE




This function enables you to delete or skip the stored programmes.
You can also move some channels to other programme numbers.

■ Auto Sort

- 1  **GREEN** Start Auto Sort.





- After activating Auto Sort once, you can no longer edit programmes.

■ Deleting a programme




- 1  Select a programme number to be deleted.
- 2  **RED** Turn the deleted programme number to red.
- 3  **RED** Release the deleted programme.

- The selected programme is deleted, all the following programmes are shifted up one

■ Moving a programme



- 1  Select a programme number to be moved.
- 2   **YELLOW** Turn the moved programme number to YELLOW.
- 3  **YELLOW** Release the moved programme.

■ Skipping a programme number

- 1  Select a programme number to be skipped.
- 2  **BLUE** Turn the skipped programme number to blue.
- 3  **BLUE** Release the skipped programme.

- When a programme number is skipped it means that you will be unable to select it using the **PR + / -** button during normal TV viewing.
- If you wish to select a skipped programme, directly enter the programme number with the **NUMBER** buttons or select it in the programme edit or EPG.

■ Selecting a Favourite Programme

- 1   **FAV** Select your favourite programme number.

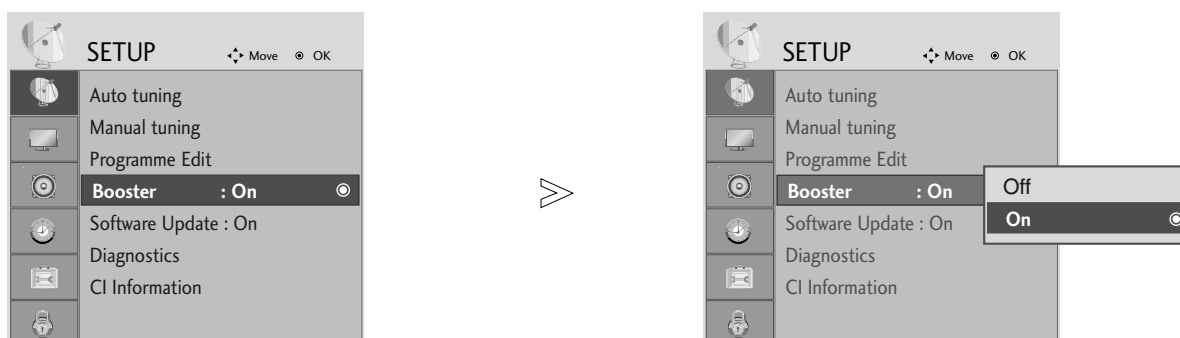
- The selected programme will be added to the favourite programme list.








WATCHING TV /PROGRAMME CONTROL

BOOSTER (IN DIGITAL MODE ONLY)

If reception is poor, change **Booster** to **On**.

When the signal is strong, select “**Off**”.



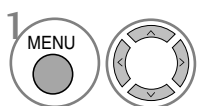
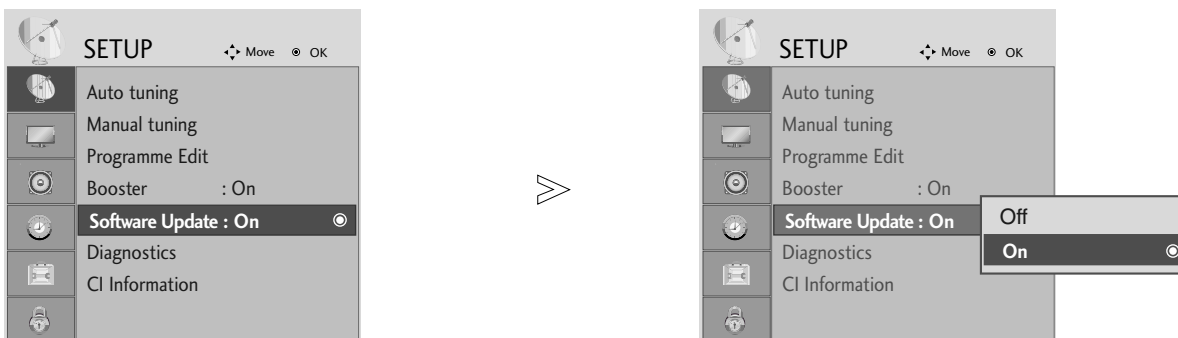
- 1   Select **SETUP**.
- 2   Select **Booster**.
- 3   Select **On** or **Off**.
- 4  Save.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

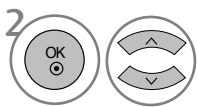
WATCHING TV /PROGRAMME CONTROL

SOFTWARE UPDATE

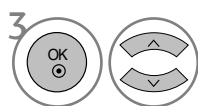
Software Update means software can be downloaded through the digital terrestrial broadcasting system.



Select **SETUP**.



Select **Software Update**.



Select **On** or **Off**.

- If you select **On**, a user confirm message box will be displayed to notify that new software is found.



Save.

* When setting “Software Update”

Occasionally, a transmission of updated digital software information will result in the following menu on the TV screen.



Select the **YES** using the ◀▶ button and when you see the following picture.



After Software Update is completed, the System takes about one minute to restart.



- During Progress of a Software Update, please note the following:

- Power to the set must not be interrupted.
- The set must not be switched off.
- The antenna must not be disconnected.
- After Software Update, you can confirm the updated software version in Diagnostics menu.

WATCHING TV /PROGRAMME CONTROL

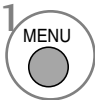
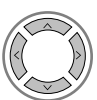


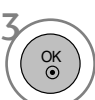
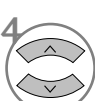
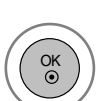
DIAGNOSTICS (IN DIGITAL MODE ONLY)

This function enables you to view information on the Manufacturer, Model/Type, Serial Number and Software Version.

This displays the information and signal strength of the tuned MUX.

This displays the signal information and service name of the selected MUX.



-   Select **SETUP**.
-   Select **Diagnostics**.
-  Display Manufacturer, Model/Type, Serial Number and Software Version.
-   Display the Channel information.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

WATCHING TV /PROGRAMME CONTROL

CI [COMMON INTERFACE] INFORMATION

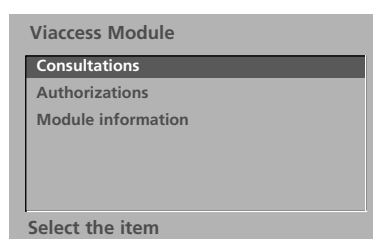
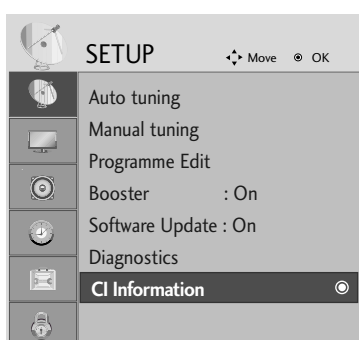
This function enables you to watch some encrypted services (paid services). If you remove the CI Module, you cannot watch paid services.

When the module is inserted into the CI slot, you can access the module menu.

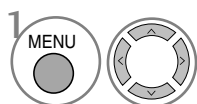
To purchase a module and smart card, contact your dealer. Do not repeatedly insert or remove a CAM module from the set. This may cause a malfunction. When the set is turned on after inserting a CI Module, you may not have any sound output.

This may be incompatible with the CI module and smart card.

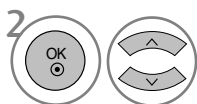
CI (Common Interface) functions may not be possible depending upon the country broadcasting circumstances.



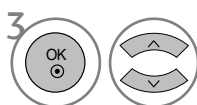
- This OSD is only for illustration and the menu options and screen format will vary according to the Digital pay services provider.
- It is possible for you to change CI (Common Interface) menu screen and service by consulting your dealer.



Select **SETUP**.



Select **CI Information**.



Select the desired item: Module information, smart card information, language, or software download, etc.



Save.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

WATCHING TV /PROGRAMME CONTROL

SELECTING THE PROGRAMME TABLE

You can check which programmes are stored in the memory by displaying the programme table.



Displayed in the Locked Programme.

■ Displaying programme LIST



Display the PROGRAMME LIST.

- You may find some blue programmes. These have been set up to be skipped by auto programming or in the programme edit mode.
- Some programmes with the channel number shown in the programme LIST indicate there is no station name assigned.

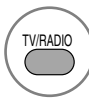
■ Selecting a programme in the programme list



Select a programme.

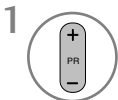


Switch to the chosen programme number.



From the programme you are currently watching, the mode will change from TV to DTV to Radio.

■ Paging through a programme list



Turns the pages.



Returns to normal TV viewing.

■ Displaying the favourite programme table



Display the Favourite Programme table.

EPG (ELECTRONIC PROGRAMME GUIDE) (IN DIGITAL MODE)

This system has an Electronic Programme Guide (EPG) to help navigate through all the possible viewing options.


The EPG supplies information such as programme listings, start and end times for all available services. In addition, detailed information about the programme is often available in the EPG (the availability and amount of these programme details will vary, depending on the particular broadcaster).

This function can be used only when the EPG information is broadcasted by broadcasting companies.

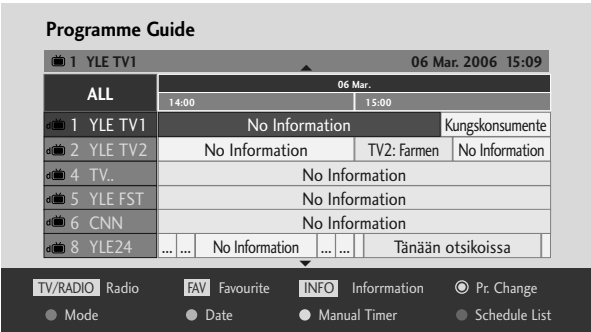
The EPG displays the programme description for the next eight days.

Switch on/off EPG

1



Switch on or off EPG.




Select a programme

1

 or 

Select desired programme.












2















Display the selected programme.

EPG (ELECTRONIC PROGRAMME GUIDE) (IN DIGITAL MODE)







Button Function in NOW/NEXT Guide Mode

| | | | |
|---|---|---|-----------------------------------|
|  RED | Change EPG mode. |  | Select the Broadcast Programme. |
|  YELLOW | Enter Timer Record/Remind setting mode. |  | Page Up/Down. |
|  BLUE | Enter Timer Record/Remind list mode. |  or  | Switch off EPG. |
|  OK | Change to the selected programme. |  | Select TV or RADIO Programme. |
|  | Select NOW or NEXT Programme. |  | The detail information on or off. |

Button Function in 8 Day Guide Mode

| | | | |
|---|---|---|-------------------------------------|
|  RED | Change EPG mode. |  | Select the Broadcast Programme. |
|  GREEN | Enter Date setting mode. |  | Page Up/Down. |
|  YELLOW | Enter Timer Record/Remind setting mode. |  or  | Switch off EPG. |
|  BLUE | Enter Timer Record/Remind list mode. |  | Select TV or RADIO Programme. |
|  OK | Change to the selected programme. |  | The detailed information on or off. |
|  | Select NOW or NEXT Programme. | | |

Button Function in Date Change Mode

| | | | |
|--|-------------------------------|---|-------------------------------|
|  GREEN | Switch off Date setting mode. |  | Switch off Date setting mode. |
|  OK | Change to the selected date. |  or  | Switch off EPG. |
|  | Select a date. | | |

EPG (ELECTRONIC PROGRAMME GUIDE) (IN DIGITAL MODE)

Button Function in Extended Description Box



Text Up/Down.



Enter Timer Record/Remind setting mode.



The detailed information on or off.



or



Switch off EPG.

Button Function in Record/Remind Setting Mode

- This function is available only when recording equipment that uses 8 pin recording signalling has been connected to the DTV-OUT terminal, using a SCART cable.



Change to Guide or Timer list mode.



Save Timer Record/Remind.



Select Type, Service, Date or Start/End time.



Function setting.

Button Function in Schedule List Mode



Add new Manual Timer setting mode.



Enter Schedule list editing mode.



Delete the selected item.



Change to Guide mode.



Select Schedule list.

PICTURE CONTROL

PICTURE SIZE (ASPECT RATIO) CONTROL

You can watch the screen in various picture formats; 16:9, Just Scan, Original, 4:3, 14:9 and Zoom1/2.

If a fixed image is displayed on the screen for a long time, that fixed image may become imprinted on the screen and remain visible.

You can adjust the enlarge proportion using ▲ ▼ button.

This function works in the following signal.

- You can also adjust **Aspect Ratio** in the **RATIO OSD**.
- For Zoom Setting, select **1 4:3**, **Zoom1** and **Zoom2** in Ratio OSD.

• 16:9

The following selection will allow you to adjust the picture horizontally, in linear proportion, to fill the entire screen (useful for viewing 4:3 formatted DVDs).



• 4:3

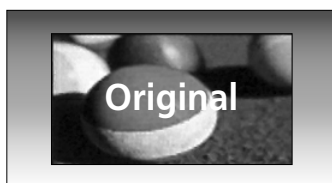
The following selection will allow you to view a picture with an original 4:3 aspect ratio, grey bars will appear on both the left and right of the screen.



PICTURE CONTROL

- **Original**

When your TV receives a wide screen signal, it will automatically change to the picture format broadcast.



- **14:9**

You can view a picture format of 14:9 or a general TV programme in the 14:9 mode. The 14:9 screen is viewed in the same way as in 4:3, but is magnified to the left and right.



- **Zoom1**

The following selection will allow you to view the picture without any alteration, while filling the entire screen. However, the top and bottom of the picture will be cropped.



- **Zoom2**

Choose Zoom 2 when you wish the picture to be altered, both horizontally extended and vertically cropped. The picture adopting a compromise between alteration and screen coverage.



- **Just Scan**

The following Selection allows you to view the picture in the best quality without loss of original picture in high resolution image.

Note: If there is interference in original picture, you can view interference at the edge.



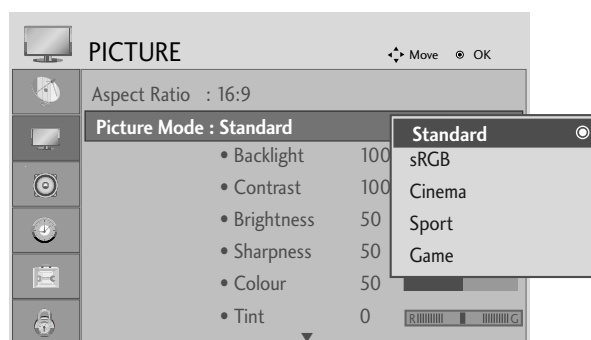
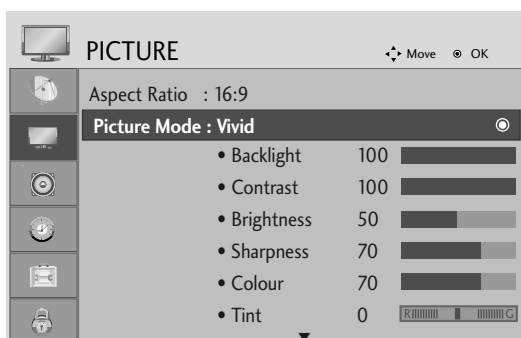
! NOTE

- ▶ You can only select 16:9 (Wide), 4:3, 14:9, Zoom 1/2 in Component (under 720p) mode.
- ▶ You can only select 4:3, 16:9 (Wide) in RGB/DVI mode only.
- ▶ In HDMI/Component (over 720p) mode, Just Scan is available.
- ▶ You can only select Original in UK digital teletext (MHEG-5).

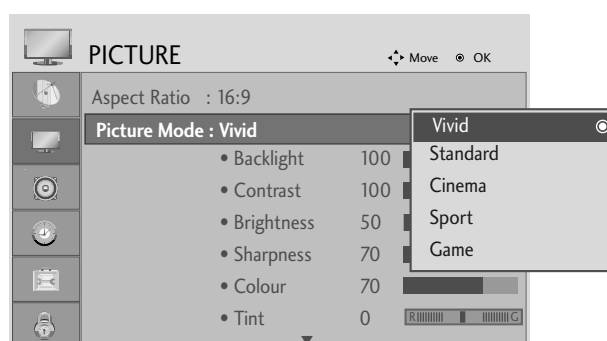
PICTURE CONTROL

PRESET PICTURE SETTINGS

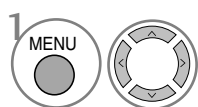
Picture Mode-Preset



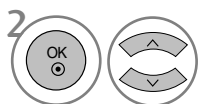
<RGB,DVI Mode>



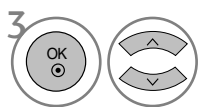
<Other mode>



Select **PICTURE**.



Select **Picture Mode**.



Select desired picture value.

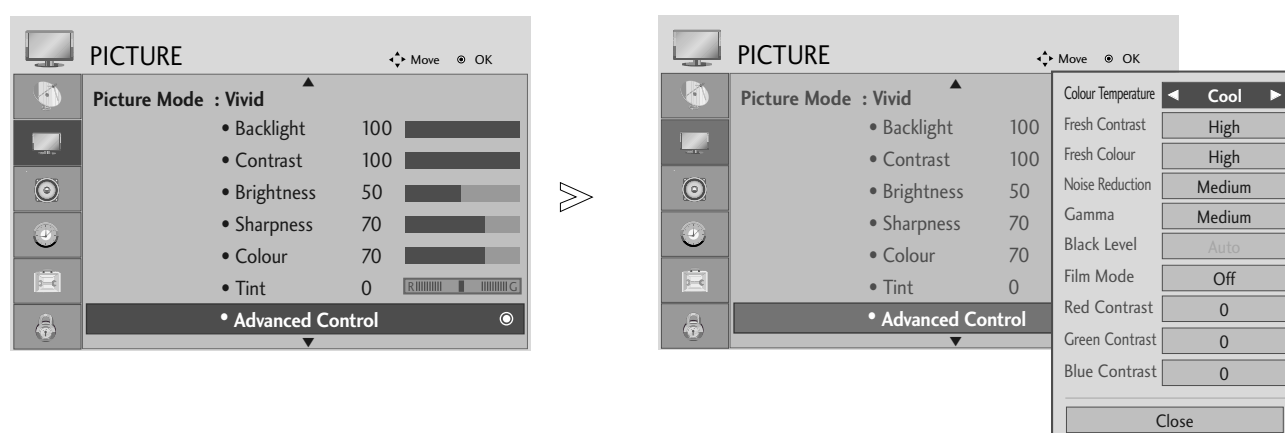
- **Picture Mode** adjusts the set for the best picture appearance. Select the preset value in the **Picture Mode** menu based on the programme category.








- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

PICTURE CONTROL

Auto Colour Tone Control (Warm/Medium/Cool)

Choose one of three automatic colour adjustments. Set to warm to enhance warm colours such as red, or set to cool to see less intense colours with more blue.



- 1   Select **PICTURE**.
- 2   Select **Advanced Control**.
- 3   Select **Colour Temperature**.
- 4  Select either **Cool**, **Medium** or **Warm**.

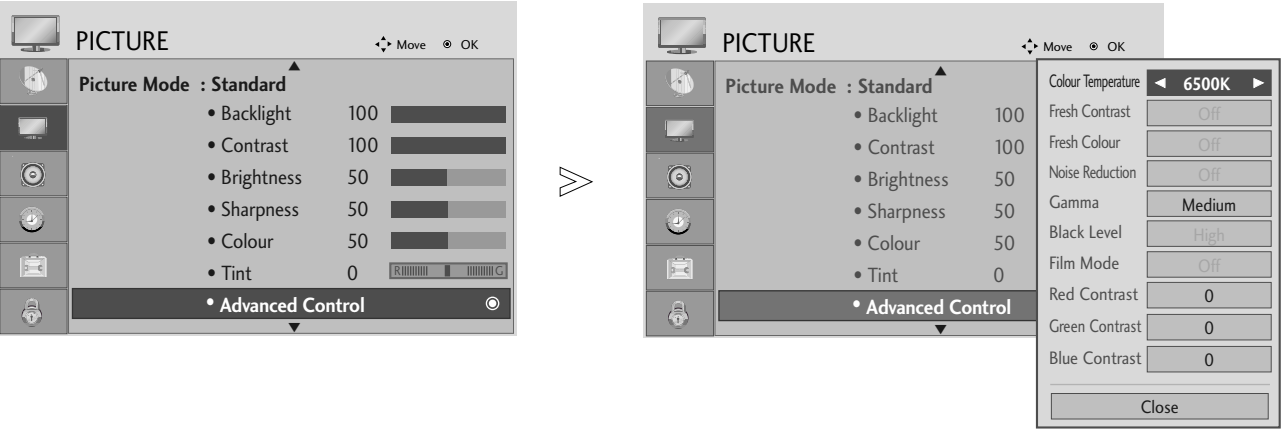
- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

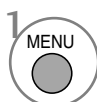
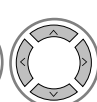

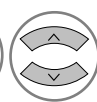

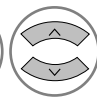

PICTURE CONTROL

Auto Colour Tone Control (6500K/9300K)(RGB,DVI mode only)

Advanced control menu is inactivated when picture mode is sRGB.

Choose one of two automatic colour adjustments.



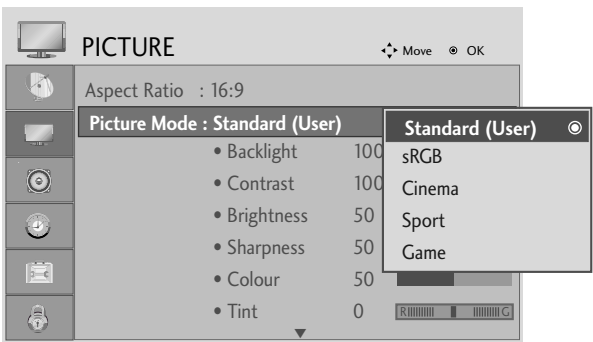
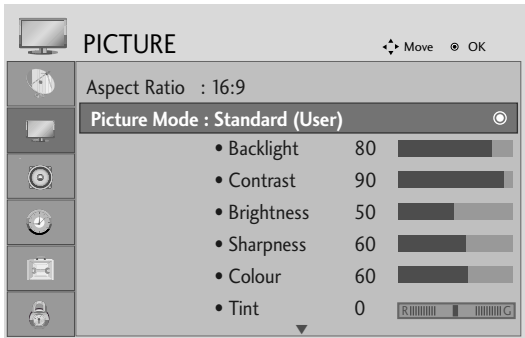
-   Select **PICTURE**.
-   Select **Advanced Control**.
-   Select **Colour Temperature**.
-  Select either **6500K**, **9300K**.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

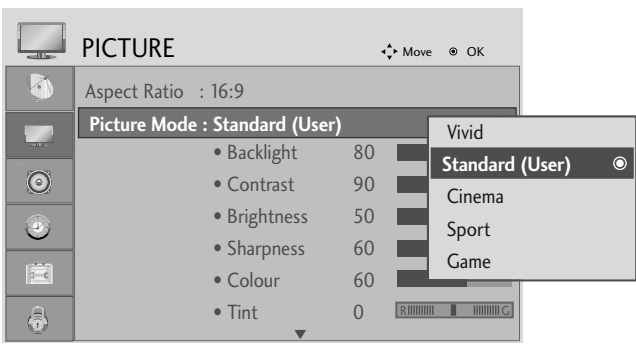
PICTURE CONTROL

MANUAL PICTURE ADJUSTMENT











Picture Mode-User option



<RGB,DVI Mode>



<Other mode>

- 1   Select **PICTURE**.
- 2   Select **Picture Mode**.
- 3   Select desired picture value.
- 4   Select **Backlight**, **Contrast**, **Brightness**, **Sharpness**, **Colour** or **Tint**.
- 5   Make appropriate adjustments.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

! NOTE

- ▶ You cannot adjust colour, sharpness and tint in the RGB, DVI mode.

PICTURE CONTROL

PICTURE IMPROVEMENT TECHNOLOGY

Fresh Contrast

Optimizes the contrast automatically according to the brightness of the reflection.

Fresh Colour

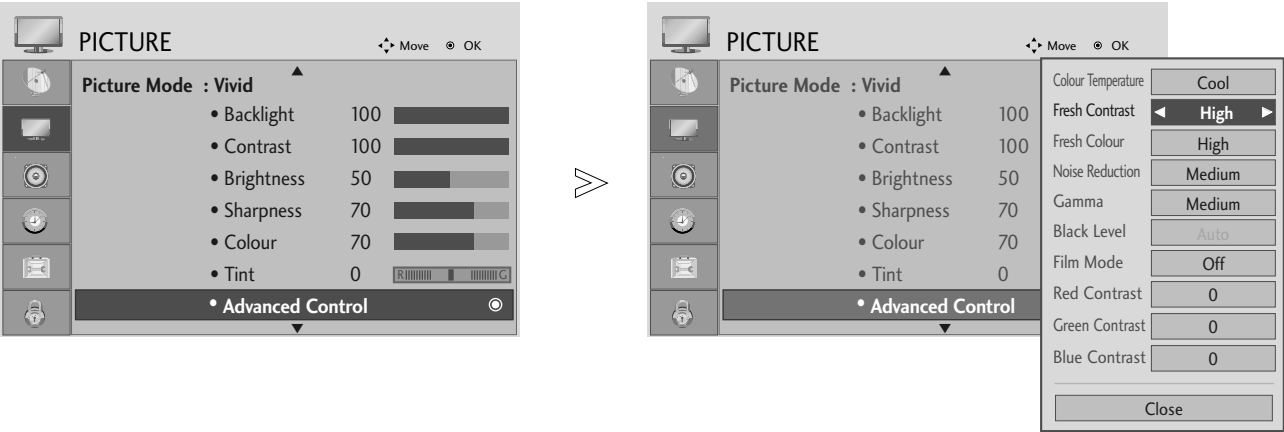
Adjusts the colour of the reflection automatically to reproduce natural colours as close as possible.

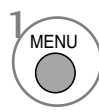
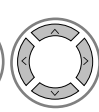

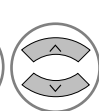



Noise Reduction

Removes interference up to the point where it does not damage the original picture.

Gamma

High gamma values display whitish images and low gamma values display high contrast images.



-   Select **PICTURE**.
-   Select **Advanced Control**.
-   Select **Fresh Contrast, Fresh Colour, Noise Reduction or Gamma**.
-  Select your desired Source.

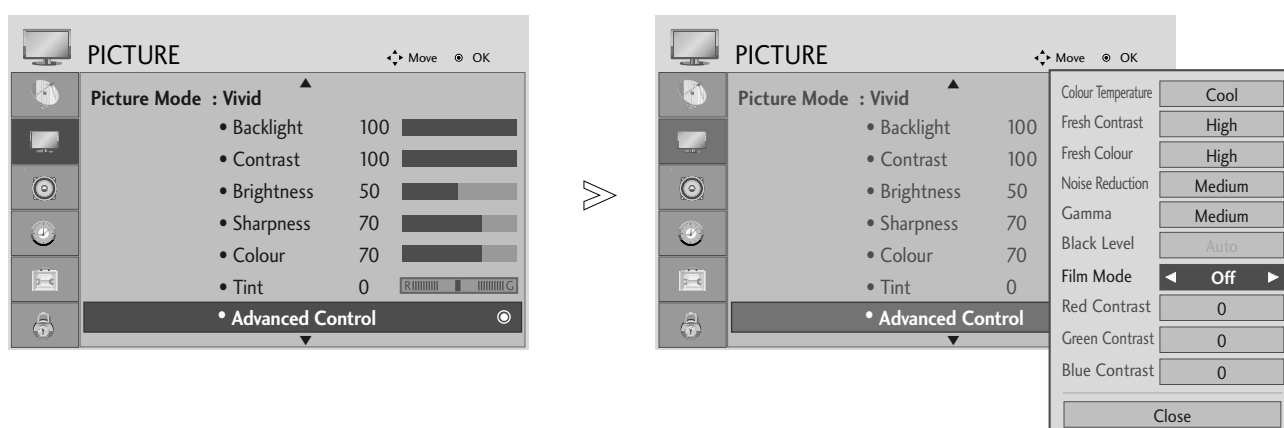
- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.








PICTURE CONTROL

ADVANCED - FILM MODE

To set the product up for the best picture quality for viewing films.

This feature operates only in TV, AV and Component 480i/576i/1080i mode.



-   Select **PICTURE**.
-   Select **Advanced Control**.
-   Select **Film Mode**.
-  Select **On or Off**.

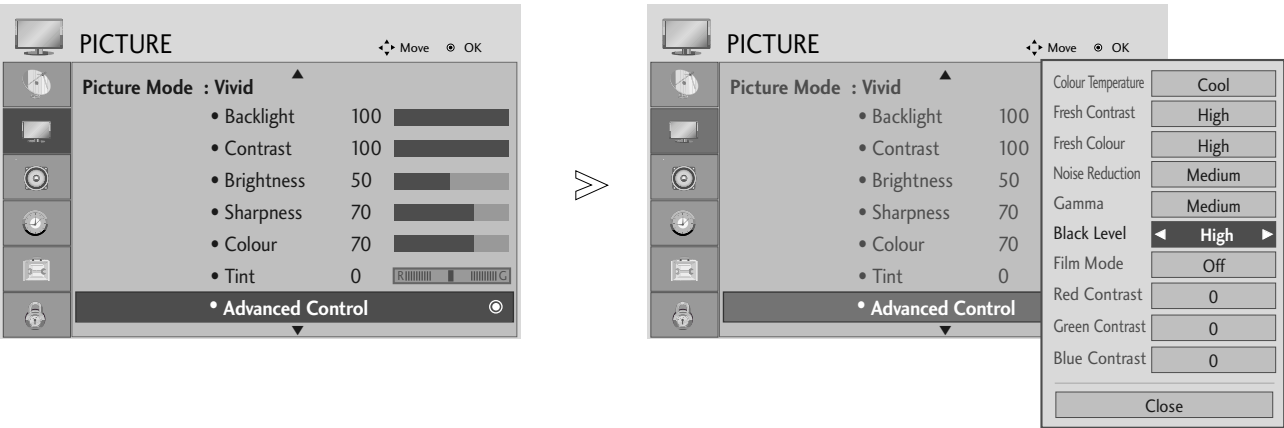
- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

PICTURE CONTROL

ADVANCED - BLACK (DARKNESS) LEVEL

When you view a film, this function adjusts the set to the best picture quality.

This function works in the following mode: AV (NTSC-M), HDMI or Component.



- 1 Select **PICTURE**.
- 2 Select **Advanced Control**.
- 3 Select **Black Level**.
- 4 Select **Low** or **High**.

- **Low:** The reflection of the screen gets darker.
- **High:** The reflection of the screen gets brighter.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

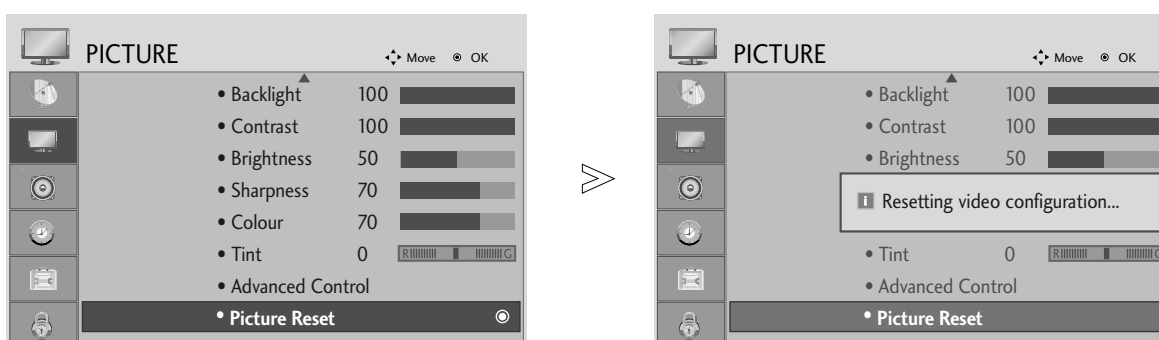
! NOTE






- ▶ If input is not AV(NTSC-M), HDMI or component, this function set to auto.
- ▶ In case of auto, user can't adjust it directly.
- ▶ Auto: Realizing the black level of the screen and set it to High or Low automatically.

PICTURE CONTROL

PICTURE RESET

Settings of the selected picture modes return to the default factory settings.



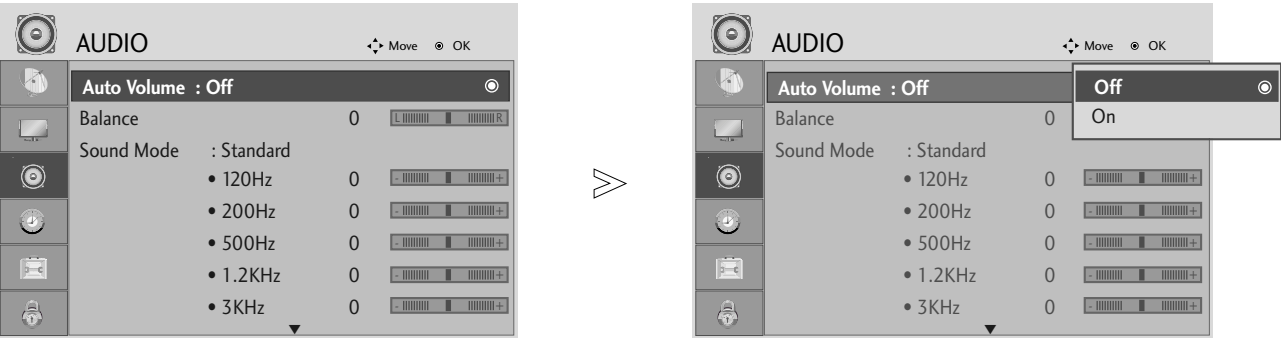
- 1   Select **PICTURE**.
- 2   Select **Picture Reset**.
- 3  Initialize the adjusted value.

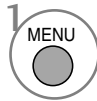


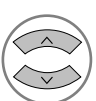

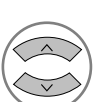
- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

SOUND & LANGUAGE CONTROL

AUTO VOLUME LEVELER

AVL automatically remains on the same volume level if you change programmes.



-   Select **AUDIO**.
-   Select **Auto Volume**.
-   Select **On** or **Off**.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

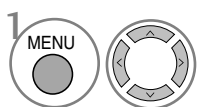
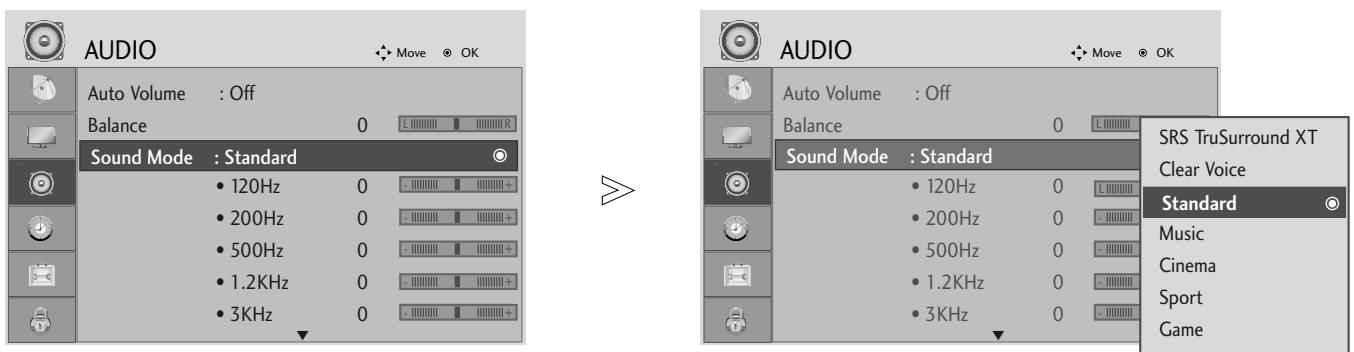
SOUND & LANGUAGE CONTROL

PRESET SOUND SETTINGS - SOUND MODE

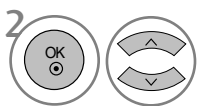
You can select your preferred sound setting; **SRS TruSurround XT**, **Clear Voice**, **Standard**, **Music**, **Cinema**, **Sport** and **Game** and you can also adjust the frequency of the equalizer.

Sound Mode lets you enjoy the best sound without any Special adjustment as the TV set's the appropriate sound options based on the programme content.

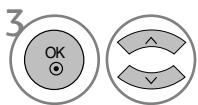
SRS TruSurround XT, **Clear Voice**, **Standard**, **Music**, **Cinema**, **Sport** and **Game** are preset for optimum sound quality at the factory.



Select **AUDIO**.



Select **Sound Mode**.



Select **SRS TruSurround XT**, **Clear Voice**, **Standard**, **Music**, **Cinema**, **Sport** or **Game**.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

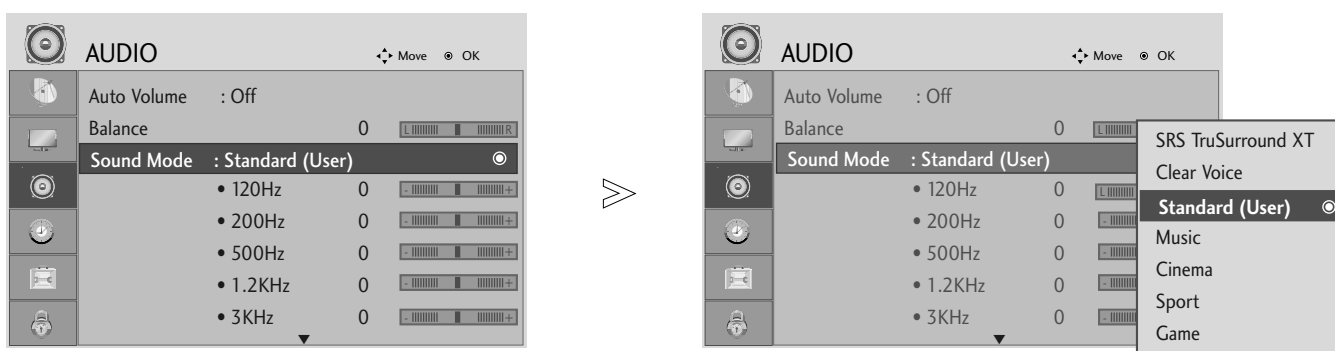
- ▶ **SRS** and **TruSurround XT** are a trademark of SRS Labs, Inc.
- ▶ TruSurround XT technology is incorporated under license from SRS Labs, Inc.

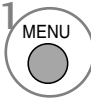
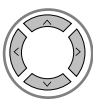



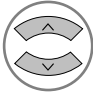

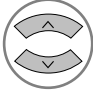


SOUND & LANGUAGE CONTROL

SOUND SETTING ADJUSTMENT - USER MODE

Adjusting the audio equalizer.

Frequency bands are inactivated when Sound Mode is SRS TruSurround XT or Clear Voice.



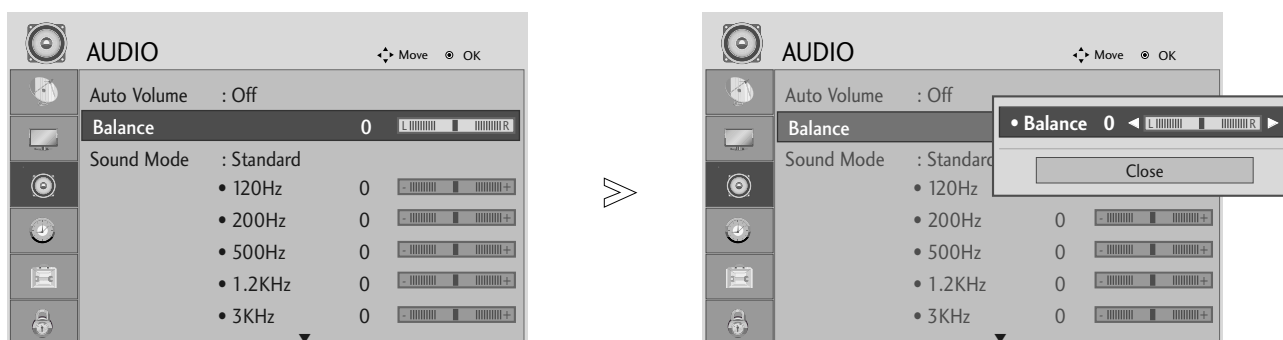
- 1   Select **AUDIO**.
- 2   Select **Sound Mode**.
- 3   Select **SRS TruSurround XT, Clear Voice, Standard, Music, Cinema, Sport or Game**.
- 4   Select a frequency band.
- 5   Set the desired sound level.



- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

SOUND & LANGUAGE CONTROL

BALANCE

You can adjust the sound balance of the speakers to preferred levels.



- 1   Select **AUDIO**.
- 2   Select **Balance**.
- 3   Make desired adjustment.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

SOUND & LANGUAGE CONTROL

SELECTING DIGITAL AUDIO OUT

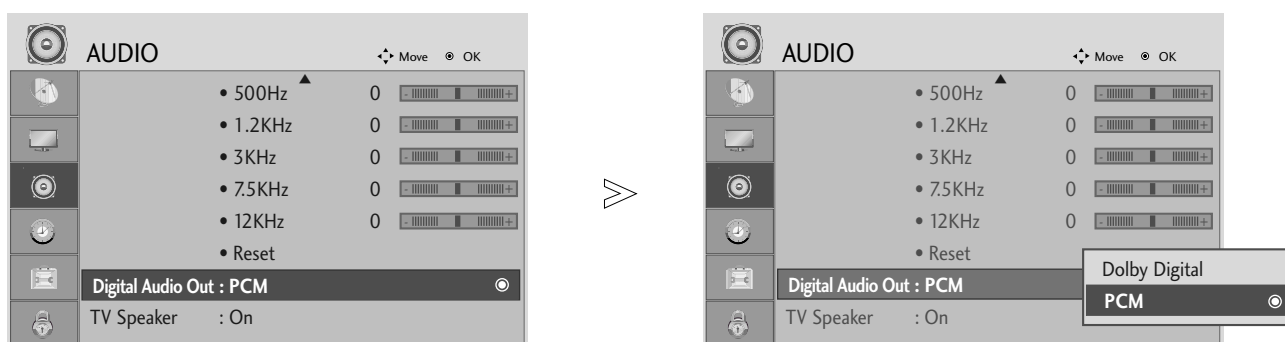
This function allows you to select your preferred Digital Audio Output.

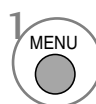
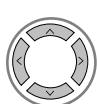

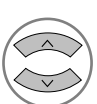


The TV can only output DOLBY Digital if a channel is broadcast with Dolby Digital audio.

When Dolby digital is available, selecting Dolby Digital in the Digital Audio Out menu will set SPDIF output to Dolby Digital

If Dolby Digital is selected in the digital audio out menu when dolby digital is not available, SPDIF output will be PCM.

Even if both Dolby Digital and Audio language have been set in a channel which broadcast Dolby Digital Audio, only Dolby Digital will be played.



- 1   Select **AUDIO**.
- 2   Select **Digital Audio Out**.
- 3   Select **Dolby Digital** or **PCM**.



Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

- There is a possibility that when HDMI mode, some DVD players do not make SPDIF sound. At that time, set the output of the digital audio of the DVD player to PCM.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

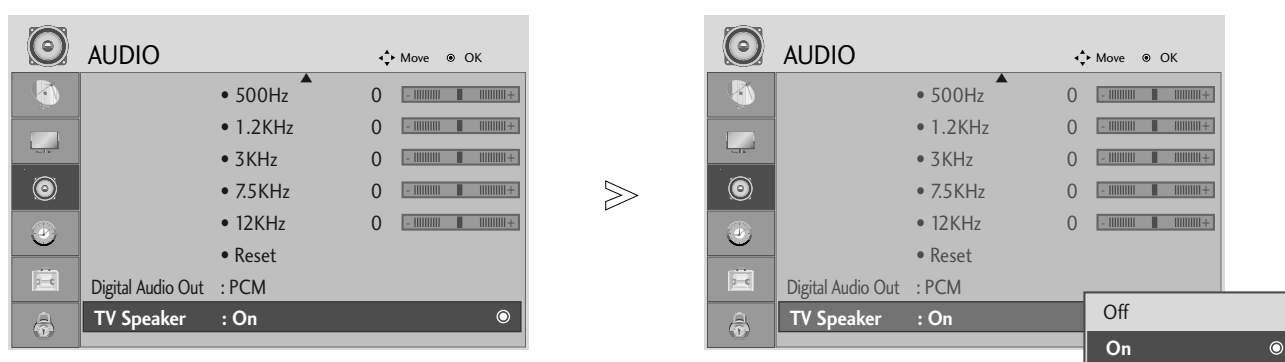
SOUND & LANGUAGE CONTROL







TV SPEAKERS ON/ OFF SETUP

You can adjust the internal speaker status.

In **COMPONENT** the TV speaker can be operational even when there is no video signal.

If you wish to use an external Hi-Fi system, turn off the TV internal speakers.



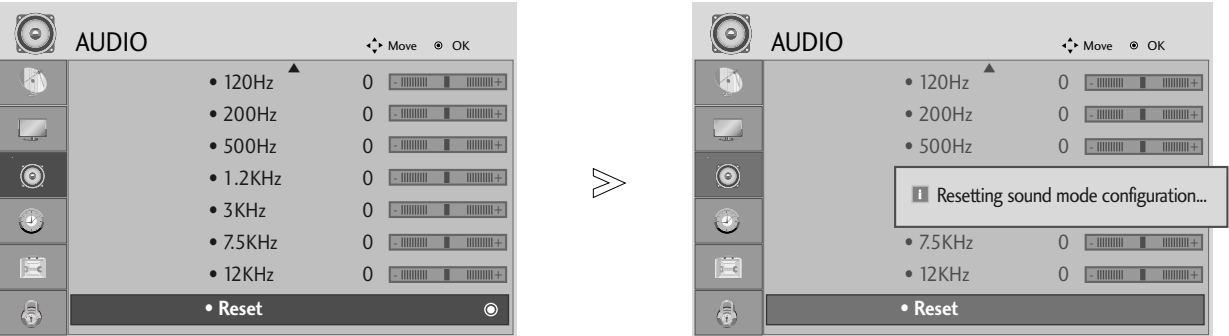
- 1   Select **AUDIO**.
- 2   Select **TV Speaker**.
- 3   Select **On** or **Off**.

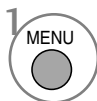
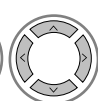



- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

SOUND & LANGUAGE CONTROL

AUDIO RESET

Settings of the selected Sound Mode return to the default factory settings.



-   Select **AUDIO**.
-   Select **Reset**.
-  Initialize the adjusted value.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

SOUND &LANGUAGE CONTROL

I/II

Stereo/Dual Reception (In Analogue Mode Only)

When a programme is selected, the sound information for the station appears after the programme number and station name disappear.



Select the sound output.

| Broadcast | On Screen Display |
|-----------|----------------------------|
| Mono | MONO |
| Stereo | STEREO |
| Dual | DUAL I, DUAL II, DUAL I+II |

■ Mono sound selection

If the stereo signal is weak in stereo reception, you can switch to mono. In mono reception, the clarity of sound is improved.

■ Language selection for dual language broadcast

If a programme can be received in two languages (dual language), you can switch to DUAL I, DUAL II or DUAL I+II.

- DUAL I Sends the primary broadcast language to the loudspeakers.
- DUAL II Sends the secondary broadcast language to the loudspeakers.
- DUAL I+II Sends a separate language to each loudspeaker.

SOUND & LANGUAGE CONTROL

NICAM Reception (In Analogue Mode Only)

If the set is equipped with the receiver for NICAM reception, high quality NICAM (Near Instantaneous Companded Audio Multiplex) digital sound can be received.

Sound output can be selected according to the type of received broadcast as follows by pressing the I/II button repeatedly.

-
- 1 When **NICAM mono** is received, you can select **NICAM MONO** or **FM MONO**.
 - 2 When **NICAM stereo** is received, you can select **NICAM STEREO** or **FM MONO**.
If the stereo signal is weak, switch to **FM mono**.
 - 3 When **NICAM dual** is received, you can select **NICAM DUAL I**, **NICAM DUAL II** or **NICAM DUAL I+II** or **MONO**.
-

Speaker Sound Output Selection

In AV, Component, RGB and HDMI, DVI mode, you can select output sound for the left and right loudspeakers.

Repeatedly press the I/II button to select the sound output.

L+R: Audio signal from audio L input is sent to the left loud speaker and audio signal from audio R input is sent to the right loud speaker.

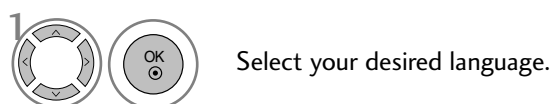
L+L: Audio signal from audio L input is sent to left and right loud speakers.

R+R: Audio signal from audio R input is sent to left and right loud speakers.

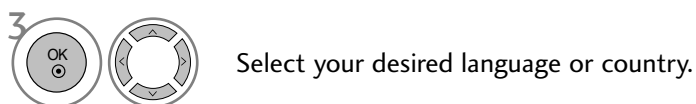
SOUND & LANGUAGE CONTROL

ON-SCREEN MENU LANGUAGE / COUNTRY SELECTION

The installation guide menu appears on the TV screen when it is switched on for the first time.



*** If you want to change Language/ Country selection**



- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

! NOTE

- ▶ If you do not finish the set-up Installation Guide by pressing **EXIT** or if you time out on the OSD (On Screen Display) the installation menu will continuously appear whenever the set is switched on until the set up is completed.
- ▶ If you select the wrong local country, teletext may not appear correctly on the screen and some problems may occur during teletext operation.
- ▶ The CI (Common Interface) function may not be applied based on country broadcasting circumstances.
- ▶ DTV mode control buttons may not function based on country broadcasting circumstances.
- ▶ In countries that Digital broadcasting regulation isn't fixed, some DTV functions may not work depending on digital broadcasting circumstances.

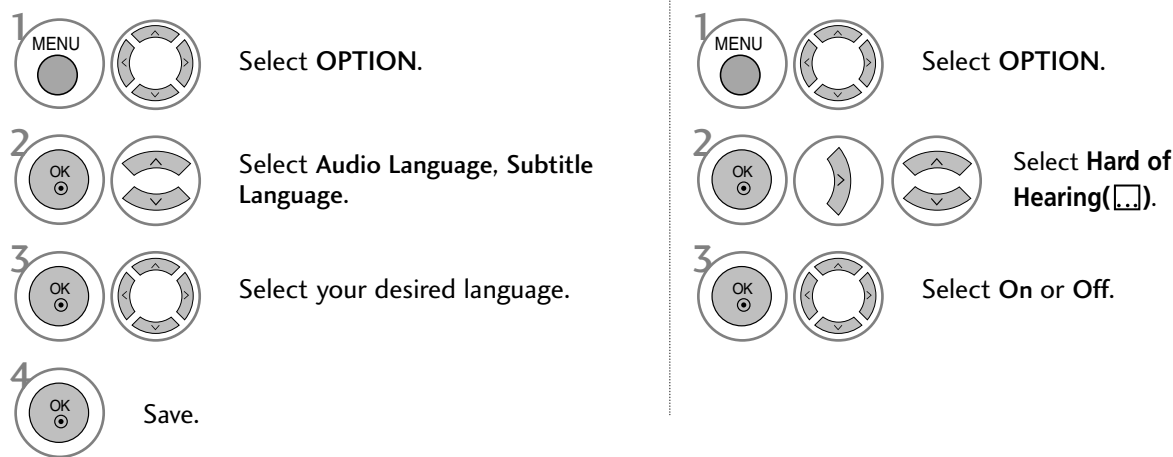
SOUND & LANGUAGE CONTROL

LANGUAGE SELECTION (IN DIGITAL MODE ONLY)

The Audio function allows selection of a preferred language.
If audio data in a selected language is not broadcast, the default language audio will be played.

Use the Subtitle function when two or more subtitle languages are broadcast. If subtitle data in a selected language is not broadcast, the default language subtitle will be displayed.

When the languages you selected as the primary for Audio Language and Subtitle Language are not supported, you can select language in secondary category.



- Press the **BACK** button to move to the previous menu screen.





< Audio Language Selection >



- ▶ When two or more audio languages are broadcast, you can select the audio language.

< Subtitle Language Selection >

- ▶ When two or more subtitle languages are broadcast, you can select the subtitle language with the **SUBTITLE** button on the remote control.
- ▶ Press the **▲ ▼** button to select a subtitle language.

- The audio/subtitles can be displayed in a simpler form with 1 to 3 characters broadcast by the service provider.
- When you select supplementary Audio (Audio for “Visual/Hearing Impaired”) it may output a part of the Main audio.

| Audio Language OSD Information | |
|---|------------------------------|
| Display | Status |
| N.A | Not Available |
|  | MPEG Audio |
|  | Dolby Digital Audio |
|  | Audio for “Visual Impaired” |
|  | Audio for “Hearing Impaired” |

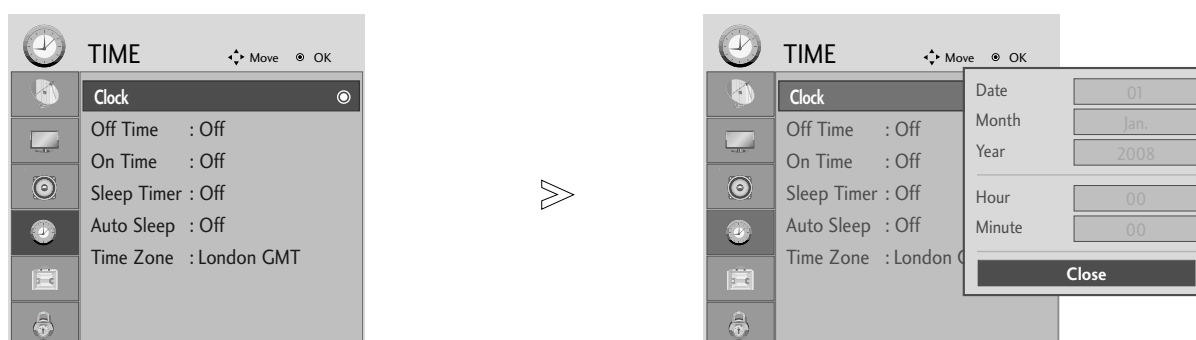
| Subtitle Language OSD Information | |
|---|--------------------------------|
| Display | Status |
| N.A | Not Available |
|  | Teletext Subtitle |
|  | Subtitle for “Hard of Hearing” |








TIME SETTING

CLOCK SETUP

The clock is set automatically when receiving a digital signal. (You can set the clock manually only if the set has no DTV signal.)

You must set the time correctly before using on/off timer function.



-   Select **TIME**.
-   Select **Clock**.
-   Select either the year, date, or time option.
-  Set the year, date, and time options.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

TIME SETTING

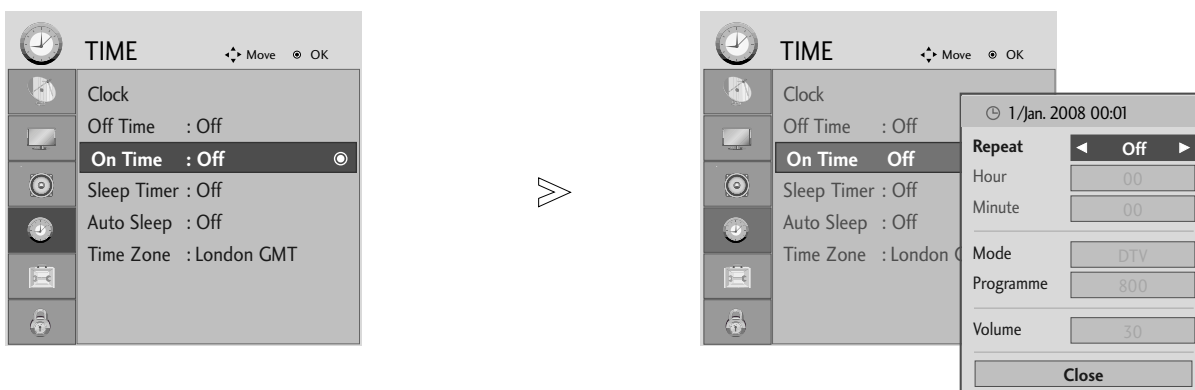
AUTO ON/OFF TIMER SETTING

The Off time function automatically switches the set to standby at a preset time.

Two hours after the set is switched on by the on time function it will automatically switch back to standby mode unless a button has been pressed.

The Off time function overrides the On timer function if both are set to the same time.

The set must be in standby mode for the On timer to work.



- 1 Select **TIME**.
- 2 Select **Off time** or **On time**.
- 3 Select **Repeat**.
- 4 Select **Off**, **Once**, **Daily**, **Mon ~ Fri**, **Mon ~ Sat**, **Sat ~ Sun** or **Sun**.
- 5 Set the **hour**.
- 6 Set the **minutes**.

- To cancel **On/Off Time** function, select **Off**.
- For **On Time** function only

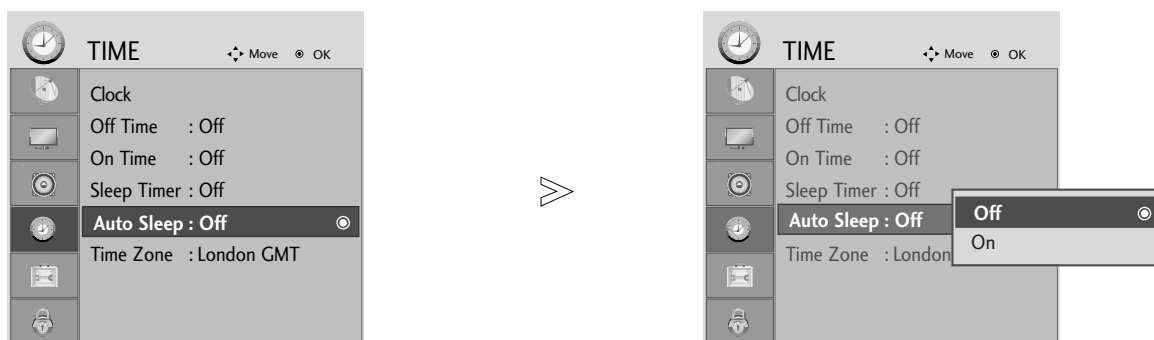
- 1 Select **Mode**.
- 2 Select **TV**, **DTV** or **Radio**.
- 3 Set the **programme**.
- 4 Adjust **volume level** at switch-on.







- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

TIME SETTING

AUTO SHUT-OFF SETTING

If the set is switched on and there is no input signal, it will switch off automatically after 10 minutes.



1.   Select **TIME**.
2.   Select **Auto Sleep**.
3.   Select **Off** or **On**.


- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

TIME SETTING


TIME ZONE SETUP

When you select a Time Zone city, the TV time is set by the time offset information based on Time Zone and GMT (Greenwich Mean Time) which is received with the broadcast signal and the time is set automatically by a digital signal.


- 1




Select **TIME**.
- 2



Select **Time Zone**.
- 3



Select your viewing area time zone.
- 4

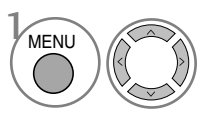


Confirm it.

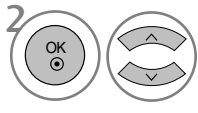
SLEEP TIMER SETTING

You do not have to remember to switch the set off before you go to sleep.
The sleep timer automatically switches the set off after the preset time has elapsed.

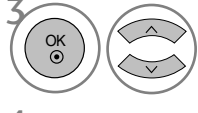
- 1




Select **TIME**.
- 2




Select **Sleep Timer**.
- 3



Select **Off, 10, 20, 30, 60, 90, 120, 180 or 240 Min.**
- 4



Confirm it.

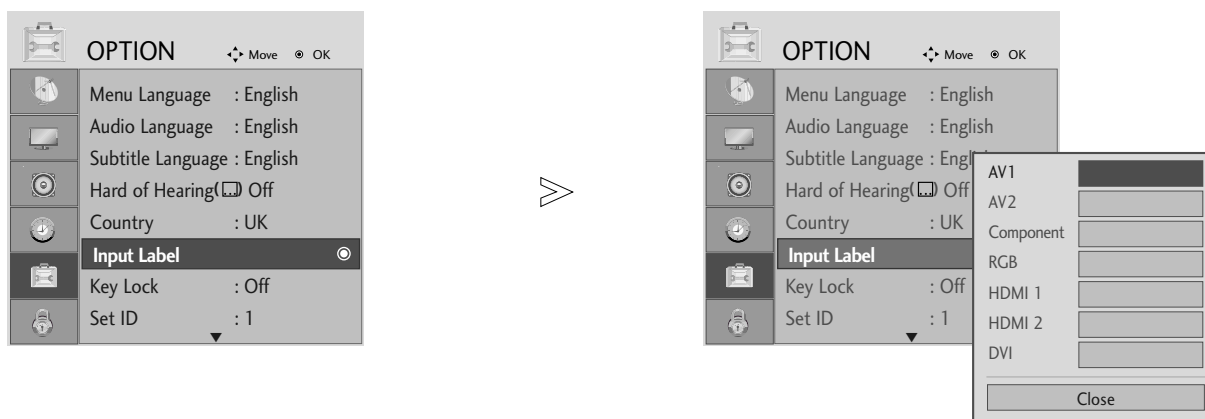
 Select the number of minutes.









- When you switch the set off, the preset sleep time is cancelled.
- You can also adjust **Sleep Timer** in the **TIME** menu.

PARENTAL CONTROL / RATINGS

INPUT LABEL

Selects a label for each input source.



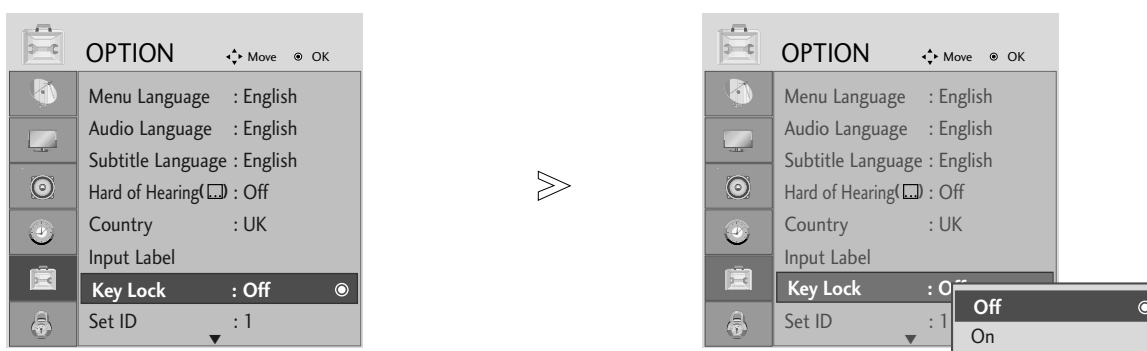
-   Select **OPTION**.
-    Select **Input Label**.
-   Select the source.
-  Select the label.

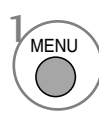
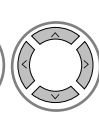

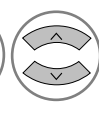

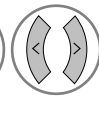

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

PARENTAL CONTROL / RATINGS

KEY LOCK

The set can be configured so that the remote control is required to control it. This feature can be used to prevent unauthorized viewing.



1.   Select **OPTION**.
2.   Select **Key Lock**.
3.   Select **On** or **Off**.
4.  Save.

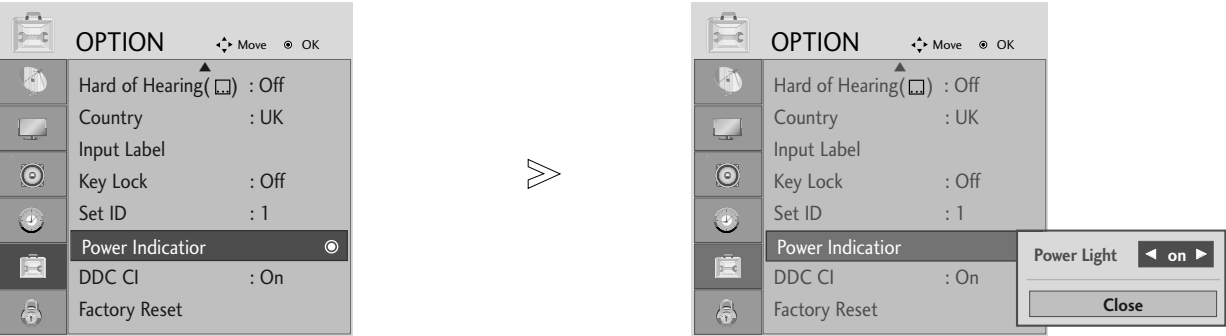
- In **Key Lock 'On'**, if the set is turned off, press the **⏻ / I**, **INPUT**, **PR ▲ ▼** button on the TV or **POWER**, **INPUT**, **PR + -** or **NUMBER** buttons on the remote control.
- With the **Key Lock On**, the display '**Key Lock On**' appears on the screen if any button on the front panel is pressed while viewing the TV.






- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

PARENTAL CONTROL / RATINGS

POWER INDICTOR

It helps you control LED when power is turned on.



-   Select **OPTION**.
-   Select **Power Indicator**.
- 

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

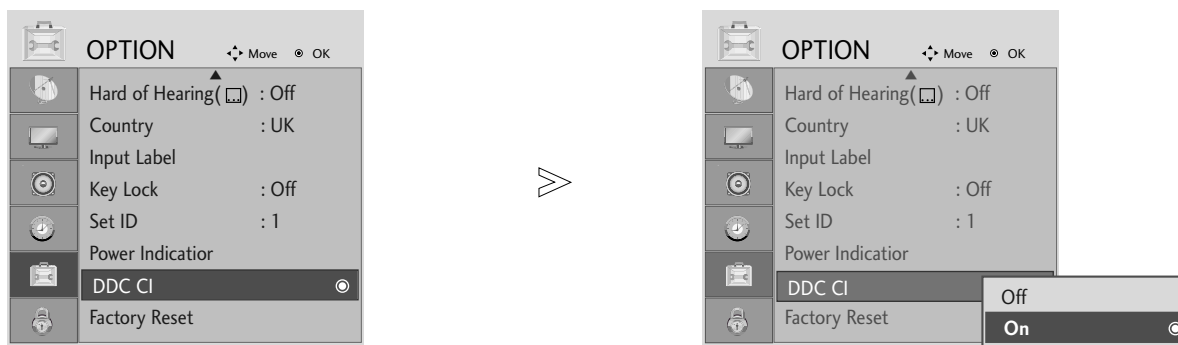
PARENTAL CONTROL / RATINGS

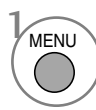


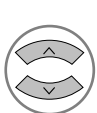

DDC CI(Only RGB, DVI mode)

DDC/CI (Display Data Channel Command Interface) is a communication protocol for communications between PC and set.

DDC/CI makes it possible to adjust and setup detailed functions on PC instead of the set OSD

Set can be adjusted with PC by connecting communication between PC and set when DDC/CI is ON, and set cannot be adjusted with PC because communication between PC and set is disconnected when DDC/CI is OFF.



- 1   Select **OPTION**.
- 2   Select **DDC CI**.
- 3 

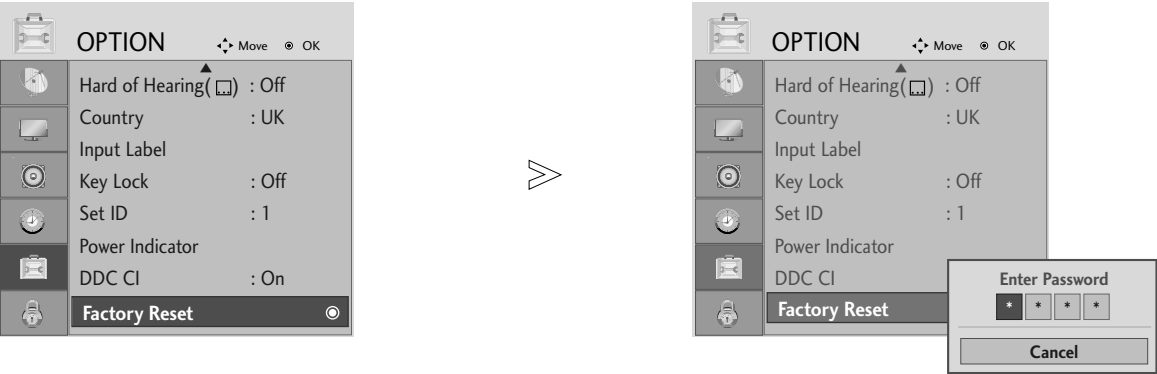
- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

PARENTAL CONTROL / RATINGS

Initializing (Reset to original factory settings)

This function operates in current mode.
To initialize the adjusted value.

When the Lock System menu is “On”, the message to enter the password appears.



- 1 MENU Select **OPTION**.
- 2 OK Select **Factory Reset**.
- 3 OK

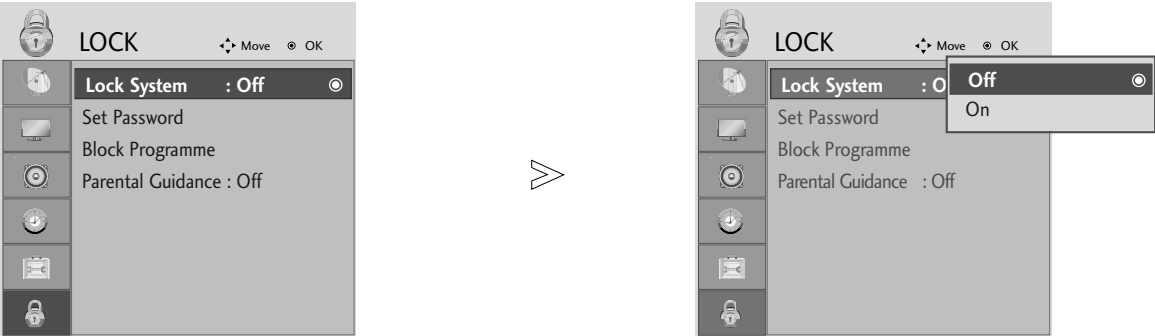
• In Lock System “On”, if you forget your password, press ‘7’, ‘7’, ‘7’, ‘7’ on the remote control handset.











- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

PARENTAL CONTROL / RATINGS

SET PASSWORD & LOCK SYSTEM

Enter the password, press '0', '0', '0', '0' on the remote control handset.



- 1   Select **LOCK**.
- 2   Select **Lock System**.
- 3   Select **On**.
- 4    Set the password.
- 5  Input a 4-digit password.
Be sure to remember this number!
Re-enter new password to confirm.

• If you forget your password, press '7', '7', '7', '7' on the remote control handset.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.








PARENTAL CONTROL / RATINGS

BLOCK PROGRAMME

Blocks any programmes that you do not want to watch or that you do not want your children to watch.

This function is available in Lock System “On”.



- 1   Select **LOCK**.
- 2   Select **Block Programme**.
- 3  Enter the **Block Programme**.
- 4   Select a programme to be locked.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

PARENTAL CONTROL / RATINGS

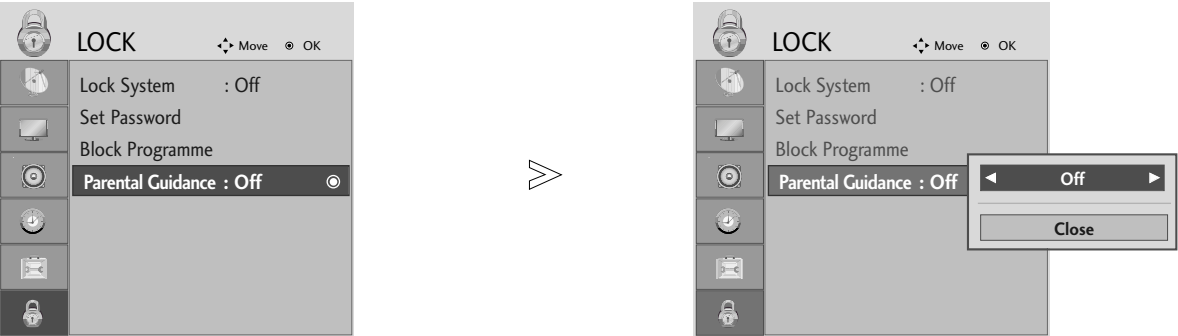
PARENTAL CONTROL (IN DIGITAL MODE ONLY)


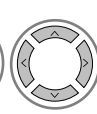

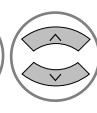

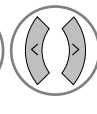

This function operates according to information from the broadcasting station. Therefore if the signal has incorrect information, this function does not operate.

A password is required to gain access to this menu.

This set is programmed to remember which option it was last set to even if you switch the set off.

Prevents children from watching certain adult's TV programmes, according to the ratings limit set.



-   Select **LOCK**.
-   Select **Parental Guidance**.
-   Make appropriate adjustments.
-  Save.

- Press the **MENU** or **EXIT** button to close the menu window.
- Press the **BACK** button to move to the previous menu screen.

TELETEXT

This feature is not available in all countries.

Teletext is a free service broadcast by most TV stations which gives up-to-the-minute information on news, weather, television programmes, share prices and many other topics.

The teletext decoder of this set can support the SIMPLE, TOP and FASTEXT systems. SIMPLE (standard teletext) consists of a number of pages which are selected by directly entering the corresponding page number. TOP and FASTEXT are more modern methods allowing quick and easy selection of teletext information.

SWITCH ON/OFF

Press the **TEXT** button to switch to teletext. The initial page or last page appears on the screen.

Two page numbers, TV station name, date and time are displayed on the screen headline. The first page number indicates your selection, while the second shows the current page displayed.

Press the **TEXT** or **EXIT** button to switch off teletext. The previous mode reappears.

SIMPLE TEXT

■ Page selection

- 1 Enter the desired page number as a three-digit number with the **NUMBER** buttons. If during selection you press a wrong number, you must complete the three-digit number and then re-enter the correct page number.
- 2 The **PR+** or **-** button can be used to select the previous or next page.

TOP TEXT

The user guide displays four fields--red, green, yellow and blue at the bottom of the screen. The yellow field denotes the next group and the blue field indicates the next block.

■ Block / group / page selection

- 1 With the blue button you can progress from block to block.
- 2 Use the yellow button to proceed to the next group with automatic overflow to the next block.
- 3 With the green button you can proceed to the next existing page with automatic overflow to the next group. Alternatively, the **PR+** button can be used.
- 4 The red button permits you to return to previous selection. Alternatively, the **PR-** button can be used.

■ Direct page selection


Corresponding to the SIMPLE teletext mode, you can select a page by entering it as a three-digit number using the **NUMBER** buttons in TOP mode.

TELETEXT

FASTEXT

The teletext pages are colour coded along the bottom of the screen and are selected by pressing the corresponding coloured button.

■ Page selection

- ① Press the  button to select the index page.
- ② You can select the pages which are colour coded along the bottom line with the same coloured buttons.
- ③ Corresponding to the SIMPLE teletext mode, you can select a page by entering its three digit page number with the NUMBER buttons in FASTEXT mode.
- ④ The PR+ or - button can be used to select the previous or next page.

SPECIAL TELETEXT FUNCTIONS



■ REVEAL

Press this button to display concealed information, such as solutions of riddles or puzzles.

Press this button again to remove the information from the display.



■ UPDATE

Displays the TV picture on the screen while waiting for the new teletext page. The display will appear at the top left hand corner of the screen. When the updated page is available then display will change to the page number. Press this button to view the updated teletext page.



■ TIME

When viewing a TV programme, press this button to display the time at the top right hand corner of the screen. Press this button again to remove the display. In teletext mode, press this button to select a sub page number. The sub page number is displayed at the bottom of the screen. To hold or change the sub page, press the RED/GREEN, PR+ or - or NUMBER buttons.

Press again to exit this function.



■ HOLD

Stops the automatic page change which will occur if a teletext page consists of two or more sub pages. The number of sub pages and the sub page displayed is usually shown on the screen below the time. When this button is pressed, the stop symbol is displayed at the top left-hand corner of the screen and the automatic page change is inhibited. To continue press this button again.

DIGITAL TELETEXT

***This function works in UK only.**

The set gives you access to a digital teletext which is greatly improved in various aspects such as text, graphics and so on.

This digital teletext can be accessed by special digital teletext services and specific services which broadcast digital teletext.

You should select off from the subtitle language to display teletext by pressing **SUBTITLE** button.

TELETEXT WITHIN DIGITAL SERVICE

- 1 Press the numeric or **PR +** or **-** button to select a digital service which broadcasts digital teletext.
To know which are digital teletext services, refer to the EPG service list.
- 2 Follow the indications on digital teletext and move onto the next step by pressing **TEXT**, **OK**, **▲** or **▼**, **◀** or **▶**, **RED**, **GREEN**, **YELLOW**, **BLUE** or **NUMBER** buttons and so on.
- 3 To change digital teletext service, just select a different service by the numeric or **PR +** or **-** button.

If pressing the **MENU**, **GUIDE** or **INFO** ⓘ button, the teletext service disappear temporarily. When pressing these buttons again, the teletext service is appeared.



TELETEXT IN DIGITAL SERVICE

- 1 Press the numeric or **PR +** or **-** button to select a certain service which broadcasts digital teletext.
- 2 Press the **TEXT** or colour button to switch on teletext.
- 3 Follow the indications on digital teletext and move onto the next step by pressing **OK**, **▲** or **▼**, **◀** or **▶**, **RED**, **GREEN**, **YELLOW**, **BLUE** or **NUMBER** buttons and so on.
- 4 Press the **TEXT** or colour button to switch off digital teletext and return to TV viewing.

Some services may allow you to access text services by pressing the **RED** button.

If pressing the **MENU**, **GUIDE** or **INFO** ⓘ button, the teletext service disappears temporarily. When pressing these buttons again, the teletext service is appeared.



APPENDIX

TROUBLESHOOTING

The operation does not work normally.

| | |
|---------------------------------|--|
| The remote control doesn't work | <ul style="list-style-type: none">■ Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control directly at the set.■ Ensure that the batteries are installed with correct polarity (+ to +, - to -).■ Ensure that the correct remote operating mode is set: TV, VCR, etc.■ Install new batteries. |
| Power is suddenly turned off | <ul style="list-style-type: none">■ Is the sleep timer set?■ Check the power control settings. Power interrupted.■ No broadcast on station tuned with Auto sleep activated. |

The video function does not work.

| | |
|---|---|
| No picture & No sound | <ul style="list-style-type: none">■ Check whether the product is turned on.■ Try another channel. The problem may be with the broadcast.■ Is the power cord inserted into wall power outlet?■ Check your antenna direction and/or location.■ Test the wall power outlet, plug another product's power cord into the outlet where the product's power cord was plugged in. |
| Picture appears slowly after switching on | <ul style="list-style-type: none">■ This is normal, the image is muted during the product startup process. Please contact your service centre, if the picture has not appeared after five minutes. |
| No color, poor colour, or poor picture | <ul style="list-style-type: none">■ Adjust Colour in menu option.■ Keep a sufficient distance between the product and the VCR.■ Try another channel. The problem may be with the broadcast.■ Are the video cables installed properly?■ Activate any function to restore the brightness of the picture. |
| Horizontal/vertical bars or picture shaking | <ul style="list-style-type: none">■ Check for local interference such as an electrical appliance or power tool. |
| Poor reception on some channels | <ul style="list-style-type: none">■ Station or cable product experiencing problems, tune to another station.■ Station signal is weak, reorient antenna to receive weaker station.■ Check for sources of possible interference. |
| Lines or streaks in pictures | <ul style="list-style-type: none">■ Check antenna (Change the direction of the antenna). |

APPENDIX

The audio function does not work.

| | |
|---------------------------------------|--|
| Picture OK & No sound | <ul style="list-style-type: none">■ Press the VOL + or - button.■ Sound muted? Press MUTE button.■ Try another channel. The problem may be with the broadcast.■ Are the audio cables installed properly? |
| No output from one of the speakers | <ul style="list-style-type: none">■ Adjust Balance in menu option. |
| Unusual sound from inside the product | <ul style="list-style-type: none">■ A change in ambient humidity or temperature may result in an unusual noise when the product is turned on or off and does not indicate a problem with the product. |

Only RGB/DVI mode applied

No image is displayed.

| | |
|---|--|
| Power is on, power indicator is blue but the screen appears extremely dark. | <ul style="list-style-type: none">■ Adjust brightness and contrast again. |
| Does the power indicator look amber? | <ul style="list-style-type: none">■ If the product is in power saving mode, move the mouse or press any key. |
| Does the 'Out of range' message appear? | <ul style="list-style-type: none">■ The signal from the PC (Video card) is out of the vertical or horizontal frequency range of the product. Adjust the frequency range by referring to the Specifications in this user's guide. |
| Does the 'Check signal cable' message appear? | <ul style="list-style-type: none">■ The signal cable between PC and product is not connected. Check the signal cable.■ Press the 'INPUT' button in the remote control to check the input signal. |

APPENDIX

'Unknown Product' message appears when the product is connected.

Did you install the driver?

- Install the product driver, which is provided with the product, or download it from the web site.
(<http://www.lge.com>)
- See if the plug_&_play function is supported by referring to the video card user's guide.

After-image appears on the product.

After-image appears when the product is turned off.

- If you use a fixed image for a long time, the pixels may be damaged quickly. Use the screen saver function.

Screen color is abnormal.

Screen has poor color resolution (16_colors).

- Set screen color resolution to more than 24 bits (true color)
Select control Panel-Display-Settings-Color Table menu in Windows.

Screen color is unstable or mono color.

- Check the connection status of the signal cable.

Do back spots appear on the screen?

- Several pixels (red, green, white or black color) may appear on the screen, which can be attributable to the unique characteristics of the LCD panel. It is not a malfunction of the LCD.

Only RGB mode applied

The screen image looks abnormal.

Is the screen position wrong?

- Adjust the Position menu in OSD.
- See if the video card resolution and frequency are supported by the product. If the frequency is out of range, set to the recommended resolution in the Control Panel-Display-Setting menu.

Do thin lines appear on the background screen?

- Adjust the Clock menu in OSD.

Horizontal noise appears or the characters look blurred.

- Adjust the Phase menu in OSD.

APPENDIX

MAINTENANCE

Early malfunctions can be prevented. Careful and regular cleaning can extend the amount of time you can enjoy your new set.

Caution: Be sure to turn the power off and unplug the power cord before you begin any cleaning.

Cleaning the Screen

- 1 To keep the dust off your screen for a while, wet a soft cloth in a mixture of lukewarm water and a little fabric softener or dishwashing detergent. Wring the cloth until it's almost dry, and then use it to wipe the screen.
- 2 Make sure the excess water is off the screen, and then let it air-dry before you turn on your set.

Cleaning the Cabinet

- To remove dirt or dust, wipe the cabinet with a soft, dry, lint-free cloth.
- Please be sure not to use a wet cloth.

Extended Absence

CAUTION

- If you expect to leave your set dormant for a long time (such as a vacation), it's a good idea to unplug the power cord to protect against possible damage from lightning or power surges.

APPENDIX

PRODUCT SPECIFICATIONS

<M1994D>

| | | |
|---|------------------------|---|
| LCD Panel | Screen Type | 19 inches Wide (481.41 mm) TFT (Thin Film Transistor) LCD (Liquid Crystal Display) Panel Visible diagonal size: 481.41 mm |
| | Pixel Pitch | 0.243(H) x 0.243(V) mm |
| Video Signal | Max. Resolution | 1680 X 1050 @60 Hz |
| | Recommended Resolution | 1680 X 1050 @60 Hz |
| | Horizontal Frequency | 30 - 83 kHz |
| | Vertical Frequency | 56 - 75 Hz |
| | Synchronization Type | Separate Sync, Digital |
| Input Connector | | TV, D-Sub Analog, SCART*2, PC Audio In, component, DVI-D, HDMI*2 |
| Power | Rated Voltage | AC100-240V~ 50/60 Hz 0.8A |
| | Power Consumption | On Mode : 48W (typ.) Sleep Mode ≤ 1W (RGB) Off Mode ≤ 1W |
| Tilt | Tilt Range | -5 ~ 15° |
| Dimensions (Width x Height x Depth) Weight | | 456.2 x 394.7 x 193.2 mm (17.96 x 15.54 x 7.61 inches) 4.3 kg / 9.48 lbs |
| Environmental conditions | Operating Temperature | 10 ~ 35°C |
| | Operating Humidity | 20 ~ 80% |
| | Storage Temperature | -10 ~ 60°C |
| | Storage Humidity | 5 ~ 90% |

■ The specifications shown above may be changed without prior notice for quality improvement.

APPENDIX

PRODUCT SPECIFICATIONS

<M2094D>

| | | |
|---|------------------------|--|
| LCD Panel | Screen Type | 20.1 inches Wide (511.13 mm) TFT (Thin Film Transistor) LCD (Liquid Crystal Display) Panel Visible diagonal size : 511.13 mm |
| | Pixel Pitch | 0.258(H) x 0.258(V) |
| Video Signal | Max. Resolution | 1680 X 1050 @ 60 Hz |
| | Recommended Resolution | 1680 X 1050 @ 60 Hz |
| | Horizontal Frequency | 30 - 83 kHz |
| | Vertical Frequency | 56 - 75 Hz |
| | Synchronization Type | Separate Sync, Digital |
| Input Connector | | TV, D-Sub Analog, SCART*2, PC Audio In, component, DVI-D, HDMI*2 |
| Power | Rated Voltage | AC100-240V~ 50/60 Hz 0.9A |
| | Power Consumption | On Mode : 52W (typ.) Sleep Mode ≤ 1W (RGB) Off Mode ≤ 1W |
| Tilt | Tilt Range | -5 ~ 15° |
| Dimensions (Width x Height x Depth) Weight | | 479.9 x 410.4 x 193.2 mm (18.89 x 16.16 x 7.61 inches) 4.5 kg / 9.92 lbs |
| Environmental conditions | Operating Temperature | 10 ~ 35°C |
| | Operating Humidity | 20 ~ 80% |
| | Storage Temperature | -10 ~ 60°C |
| | Storage Humidity | 5 ~ 90% |

■ The specifications shown above may be changed without prior notice for quality improvement.

APPENDIX

PRODUCT SPECIFICATIONS

<M2294D>

| | | |
|-------------------------------------|------------------------|---|
| LCD Panel | Screen Type | 21.995 inches Wide (558.673 mm) TFT (Thin Film Transistor) LCD (Liquid Crystal Display) Panel Visible diagonal size: 558.673 mm |
| | Pixel Pitch | 0.282(H) x 0.282(V) |
| Video Signal | Max. Resolution | 1680 X 1050 @60 Hz |
| | Recommended Resolution | 1680 X 1050 @60 Hz |
| | Horizontal Frequency | 30 - 83 kHz |
| | Vertical Frequency | 56 - 75 Hz |
| | Synchronization Type | Separate Sync, Digital |
| Input Connector | | TV, D-Sub Analog, SCART*2, PC Audio In, component, DVI-D, HDMI*2 |
| Power | Rated Voltage | AC100-240V~ 50/60 Hz 0.9A |
| | Power Consumption | On Mode : 52W (typ.) Sleep Mode ≤ 1W (RGB) Off Mode ≤ 1W |
| Tilt | Tilt Range | -5 ~ 15° |
| Dimensions (Width x Height x Depth) | | 521.7 x 435.4 x 193.2 mm (20.54 x 17.14 x 7.61 inches) |
| Weight | | 5.0 kg / 11.0 lbs |
| Environmental conditions | Operating Temperature | 10 ~ 35°C |
| | Operating Humidity | 20 ~ 80% |
| | Storage Temperature | -10 ~ 60°C |
| | Storage Humidity | 5 ~ 90% |

■ The specifications shown above may be changed without prior notice for quality improvement.

APPENDIX

PROGRAMMING THE REMOTE CONTROL

The remote is a multi-brand or universal remote. It can be programmed to operate most remote-controllable devices of other manufacturers.

Note that the remote may not control all models of other brands.

Programming a code into a remote mode

- 1 Test your remote control.
To find out whether your remote control can operate the component without programming, turn on the component such as a VCR and press the corresponding mode button (such as a **DVD** or **VCR**) on the remote control, while pointing at the component. Test the **POWER** and **PR + / -** buttons to see if the component responds properly. If not, the remote requires programming to operate the device.
- 2 Turn on the component to be programmed, then press the corresponding mode button (such as a **DVD** or **VCR**) on the remote control. The remote control button of desired device is lighted.
- 3 Press the **MENU** and **MUTE** buttons simultaneously, the remote control is ready to be programmed for the code.
- 4 Enter a code number using the number buttons on the remote control. Programming code numbers for the corresponding component can be found on the following pages. Again, if the code is correct, the device will turn off.
- 5 Press the **MENU** button to store the code.
- 6 Test the remote control functions to see if the component responds properly. If not, repeat from step 2.

PROGRAMMING CODE

DVD

| Brand | Codes | Brand | Codes | Brand | Codes |
|---------------|-----------------|------------|---------|----------|-------------|
| APEX DIGITAL | 022 | mitsubishi | 002 | RCA | 005 006 |
| DENON | 020 014 | NAD | 023 | SAMSUNG | 011 015 |
| GE | 005 006 | ONKYO | 008 017 | SONY | 007 |
| HARMAN KARDON | 027 | PANASONIC | 003 009 | THOMPSON | 005 006 |
| JVC | 012 | PHILIPS | 013 | TOSHIBA | 019 008 |
| LG | 001 010 016 025 | PIONEER | 004 026 | YAMAHA | 009 018 |
| MAGNAVOX | 013 | PROCEED | 021 | ZENITH | 010 016 025 |
| MARANTZ | 024 | PROSCAN | 005 006 | | |

APPENDIX

VCR

| Brand | Codes | Brand | Codes | Brand | Codes |
|----------------|-----------------|------------|-----------------|-----------------|-----------------|
| AIWA | 034 | MAGNAVOX | 031 033 034 041 | SAMSUNG | 032 040 102 104 |
| AKAI | 016 043 046 124 | | 067 068 | | 105 107 109 112 |
| | 125 146 | MARANTZ | 012 031 033 067 | | 113 115 120 122 |
| AMPRO | 072 | | 069 | | 125 |
| ANAM | 031 033 103 | MARTA | 101 | SANSUI | 022 043 048 135 |
| AUDIO DYNAMICS | 012 023 039 043 | MATSUI | 027 030 | SANYO | 003 007 010 014 |
| BROKSONIC | 035 037 129 | MEI | 031 033 | | 102 134 |
| CANON | 028 031 033 | MEMOREX | 003 010 014 031 | SCOTT | 017 037 112 129 |
| CAPEHART | 108 | | 033 034 053 072 | | 131 |
| CRAIG | 003 040 135 | | 101 102 134 139 | SEARS | 003 008 009 010 |
| CURTIS MATHES | 031 033 041 | MGA | 045 046 059 | | 013 014 017 020 |
| DAEWOO | 005 007 010 064 | MINOLTA | 013 020 | | 031 042 073 081 |
| | 065 108 110 111 | MITSUBISHI | 013 020 045 046 | | 101 |
| | 112 116 117 119 | | 049 051 059 061 | SHARP | 031 054 149 |
| DAYTRON | 108 | | 151 | SHINTOM | 024 |
| DBX | 012 023 039 043 | MTC | 034 040 | SONY | 003 009 031 052 |
| DYNATECH | 034 053 | MULTITECH | 024 034 | | 056 057 058 076 |
| ELECTROHOME | 059 | NEC | 012 023 039 043 | | 077 078 149 |
| EMERSON | 006 017 025 027 | | 048 | SOUNDESIGN | 034 |
| | 029 031 034 035 | NORDMENDE | 043 | STS | 013 |
| | 036 037 046 101 | OPTONICA | 053 054 | SYLVANIA | 031 033 034 059 |
| | 129 131 138 153 | PANASONIC | 066 070 074 083 | | 067 |
| FISHER | 003 008 009 010 | | 133 140 145 | SYMPHONIC | 034 |
| FUNAI | 034 | | | TANDY | 010 034 |
| GE | 031 033 063 072 | PENTAX | 013 020 031 033 | TATUNG | 039 043 |
| | 107 109 144 147 | | 063 | TEAC | 034 039 043 |
| GO VIDEO | 132 136 | PHILCO | 031 034 067 | TECHNICS | 031 033 070 |
| HARMAN KARDON | 012 045 | PHILIPS | 031 033 034 054 | TEKNIKA | 019 031 033 034 |
| HITACHI | 004 018 026 034 | | 067 071 101 | | 101 |
| | 043 063 137 150 | PILOT | 101 | THOMAS | 034 |
| INSTANTREPLAY | 031 033 | PIONEER | 013 021 048 | TMK | 006 |
| JCL | 031 033 | PORTLAND | 108 | TOSHIBA | 008 013 042 047 |
| JCPENNY | 012 013 015 033 | PULSAR | 072 | | 059 082 112 131 |
| | 040 066 101 | QUARTZ | 011 014 | TOTEVISION | 040 101 |
| JENSEN | 043 | QUASAR | 033 066 075 145 | UNITECH | 040 |
| JVC | 012 031 033 043 | RCA | 013 020 033 034 | VECTOR RESEARCH | 012 |
| | 048 050 055 060 | | 040 041 062 063 | VICTOR | 048 |
| | 130 150 152 | | 107 109 140 144 | VIDEO CONCEPTS | 012 034 046 |
| KENWOOD | 014 034 039 043 | | 145 147 | VIDEOSONIC | 040 |
| | 047 048 | REALISTIC | 003 008 010 014 | WARDS | 003 013 017 024 |
| LG (GOLDSTAR) | 001 012 013 020 | | 031 033 034 040 | | 031 033 034 040 |
| | 101 106 114 123 | | 053 054 101 | | 053 054 131 |
| LLOYD | 034 | RICO | 058 | YAMAHA | 012 034 039 043 |
| LXI | 003 009 013 014 | RUNCO | 148 | ZENITH | 034 048 056 |
| | 017 034 101 106 | SALORA | 014 | | 058 072 080 101 |
| MAGIN | 040 | | | | |

APPENDIX

IR CODES

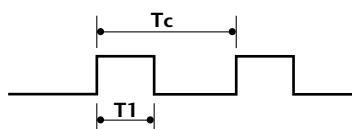
1. How to Connect

- Connect your wired remote control to the Remote Control port on the set.

2. Remote Control IR Codes

■ Output waveform

Single pulse, modulated with 37.917 KHz signal at 455 KHz



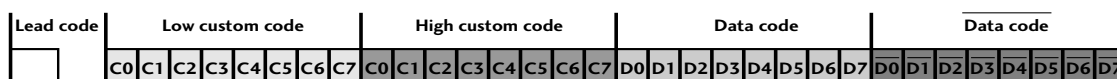
Carrier frequency

$$FCAR = 1/T_C = f_{OSC}/12$$

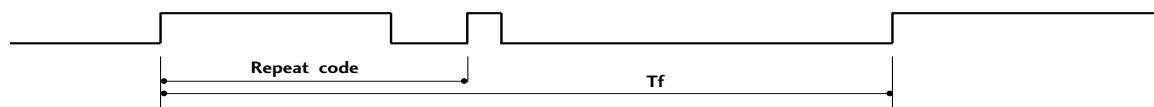
$$\text{Duty ratio} = T_1/T_C = 1/3$$

■ Configuration of frame

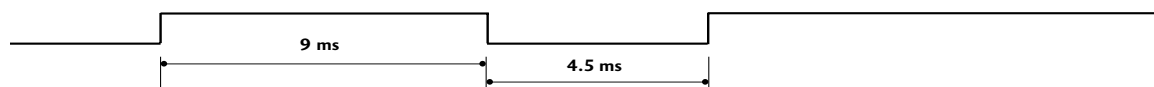
1st frame



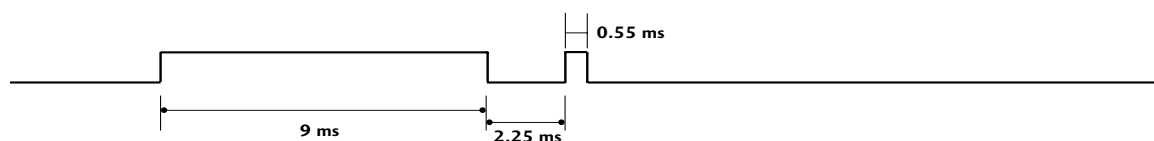
Repeat frame



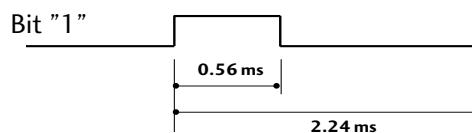
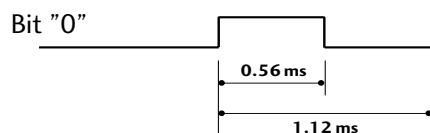
■ Lead code



■ Repeat code

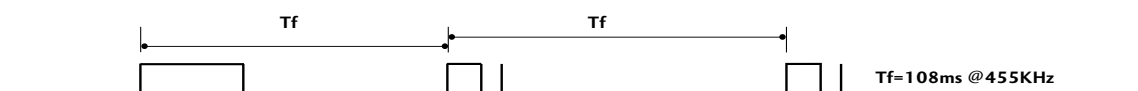


■ Bit description



■ Frame interval: Tf

The waveform is transmitted as long as a key is depressed.



APPENDIX

| Code (Hexa) | Function | Note |
|-------------|--------------|---------------------------|
| 00 | PR + | R/C BUTTON |
| 01 | PR - | R/C BUTTON |
| 02 | VOL + | R/C BUTTON |
| 03 | VOL - | R/C BUTTON |
| 40 | Up (▲) | R/C BUTTON |
| 41 | Down (▼) | R/C BUTTON |
| 06 | Right (▶) | R/C BUTTON |
| 07 | Left (◀) | R/C BUTTON |
| 08 | POWER | R/C BUTTON (POWER ON/OFF) |
| 09 | MUTE | R/C BUTTON |
| 10 | Number Key 0 | R/C BUTTON |
| 11 | Number Key 1 | R/C BUTTON |
| 12 | Number Key 2 | R/C BUTTON |
| 13 | Number Key 3 | R/C BUTTON |
| 14 | Number Key 4 | R/C BUTTON |
| 15 | Number Key 5 | R/C BUTTON |
| 16 | Number Key 6 | R/C BUTTON |
| 17 | Number Key 7 | R/C BUTTON |
| 18 | Number Key 8 | R/C BUTTON |
| 19 | Number Key 9 | R/C BUTTON |
| 0B | INPUT | R/C BUTTON |
| AA | INFO ⓘ | R/C BUTTON |
| AB | GUIDE | R/C BUTTON |
| 56 | SUBTITLE | R/C BUTTON |
| 5B | EXIT | R/C BUTTON |
| 1E | FAV | R/C BUTTON |
| 1A | Q.VIEW | R/C BUTTON |
| 50 | D/A TV | R/C BUTTON |
| F0 | TV/RADIO | R/C BUTTON |
| 0A | I/II | R/C BUTTON |
| 0E | SLEEP | R/C BUTTON |
| 43 | MENU | R/C BUTTON |
| 44 | OK(⊙) | R/C BUTTON |
| 53 | LIST | R/C BUTTON |
| 20 | TEXT | R/C BUTTON |
| 2A | REVEAL | R/C BUTTON |
| 26 | TIME | R/C BUTTON |
| 28 | BACK | R/C BUTTON |
| 62 | UPDATE | R/C BUTTON |
| 70 | INDEX | R/C BUTTON |
| 65 | HOLD | R/C BUTTON |
| 61 | BLUE Key | R/C BUTTON |
| 63 | YELLOW Key | R/C BUTTON |
| 71 | GREEN Key | R/C BUTTON |
| 72 | RED Key | R/C BUTTON |
| 79 | RATIO | R/C BUTTON |

APPENDIX

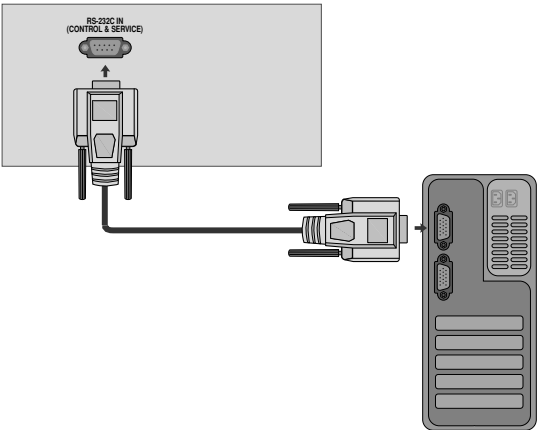
EXTERNAL CONTROL DEVICE SETUP

RS-232C Setup

Connect the RS-232C (serial port) input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.

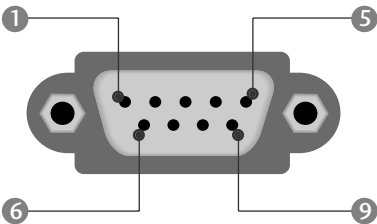
Connect the serial port of the control device to the RS-232C jack on the product back panel.

Note: RS-232C connection cables are not supplied with the product.



Type of Connector; D-Sub 9-Pin Male

| No. | Pin Name |
|-----|----------------------|
| 1 | No connection |
| 2 | RXD (Receive data) |
| 3 | TXD (Transmit data) |
| 4 | DTR (DTE side ready) |
| 5 | GND |
| 6 | DSR (DCE side ready) |
| 7 | RTS (Ready to send) |
| 8 | CTS (Clear to send) |
| 9 | No Connection |



RS-232C Configurations

7-Wire Configurations (Standard RS-232C cable)

| | PC | | TV | |
|-----|---------|-----------|---------|-----|
| RXD | 2 | ● ————— ● | 3 | TXD |
| TXD | 3 | ● ————— ● | 2 | RXD |
| GND | 5 | ● ————— ● | 5 | GND |
| DTR | 4 | ● ————— ● | 6 | DSR |
| DSR | 6 | ● ————— ● | 4 | DTR |
| RTS | 7 | ● ————— ● | 8 | CTS |
| CTS | 8 | ● ————— ● | 7 | RTS |
| | D-Sub 9 | | D-Sub 9 | |

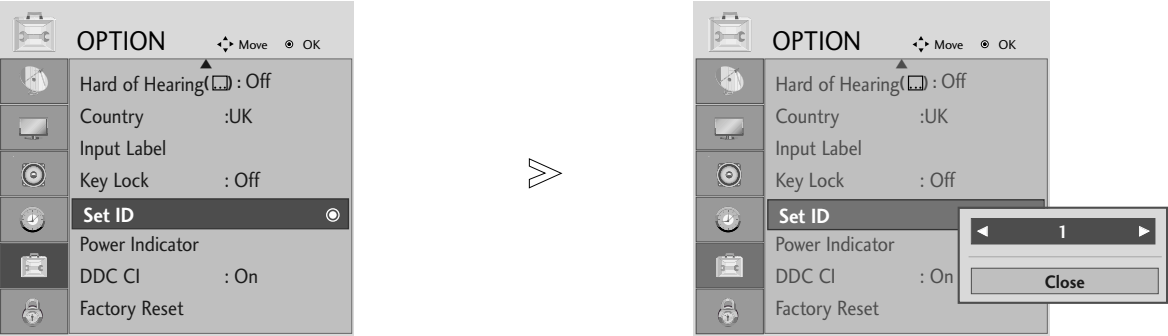
3-Wire Configurations(Not standard)


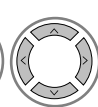



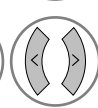
| | PC | TV | |
|-----|---------------|---------|-----|
| RXD | 2 ● ————— ● 3 | TXD | |
| TXD | 3 ● ————— ● 2 | RXD | |
| GND | 5 ● ————— ● 5 | GND | |
| DTR | 4 | 6 | DTR |
| DSR | 6 | 4 | DSR |
| RTS | 7 | 7 | RTS |
| CTS | 8 | 8 | CTS |
| | D-Sub 9 | D-Sub 9 | |

APPENDIX

Set ID

Use this function to specify a set ID number.
Refer to 'Real Data Mapping' ▶ p.95



-   Select **OPTION**.
-   Select **Set ID**.
-   adjust **Set ID** to choose the desired TV ID number.
The adjustment range of SET ID is 1 ~99.

- Press the **BACK** button to move to the previous menu screen.

APPENDIX

Communication Parameters

- Baud rate : 9600 bps (UART)
- Data length : 8 bits
- Parity : None
- Stop bit : 1 bit
- Communication code : ASCII code
- Use a crossed (reverse) cable.

Command Reference List

| | COMMAND 1 | COMMAND 2 | DATA (Hexadecimal) |
|------------------------------|--------------|--------------|-----------------------|
| 01. Power | k | a | 00 ~ 01 |
| 02. Aspect Ratio | k | c | Refer to p. 93 |
| 03. Screen Mute | k | d | 00 ~ 01 |
| 04. Volume Mute | k | e | 00 ~ 01 |
| 05. Volume Control | k | f | 00 ~ 64 |
| 06. Contrast | k | g | 00 ~ 64 |
| 07. Brightness | k | h | 00 ~ 64 |
| 08. Colour | k | i | 00 ~ 64 |
| 09. Tint | k | j | 00 ~ 64 |
| 10. Sharpness | k | k | 00 ~ 64 |
| 11. OSD Select | k | l | 00 ~ 01 |
| 12. Remote control lock mode | k | m | 00 ~ 01 |
| 13. Balance | k | t | 00 ~ 64 |
| 14. Colour Temperature | k | u | 00 ~ 02 |
| 15. Abnormal Status | k | z | 00 ~ 09 |
| 16. Auto Configure | j | u | 01 |
| 17. Equalize | j | v | Refer to p. 95 |
| 18. Tune Command | m | a | Refer to p. 96 |
| 19. Channel Add/Skip | m | b | 00 ~ 01 |
| 20. Key | m | c | Key Code |
| 21. Control Backlight | m | g | 00 ~ 64 |
| 22. Input select (Main) | x | b | Refer to p. 96 |

* When setting 15 ~ 22, a menu does not appear on screen.

Transmission / Receiving Protocol

Transmission

[Command1][Command2][][Set ID][][Data][Cr]

- * [Command 1] : First command to control the TV.
(j, k, m or x)
- * [Command 2] : Second command to control the TV.
- * [Set ID] : You can adjust the set ID to choose desired monitor ID number in option menu. Adjustment range is 1 ~ 99. When selecting Set ID '0', every connected set is controlled. Set ID is indicated as decimal (1~99) on menu and as Hexa decimal (0x0~0x63) on transmission/receiving protocol.
- * [DATA] : To transmit command data. Transmit 'FF' data to read status of command.
- * [Cr] : Carriage Return
ASCII code '0x0D'
- * [] : ASCII code 'space (0x20)'

OK Acknowledgement

[Command2][][Set ID][][OK][Data][x]

- * The TV transmits ACK (acknowledgement) based on this format when receiving normal data. At this time, if the data is in data read mode, it indicates present status data. If the data is in data write mode, it returns the data of the PC computer.

Error Acknowledgement

[Command2][][Set ID][][NG][Data][x]

- * The TV transmits ACK (acknowledgement) based on this format when receiving abnormal data from nonviable functions or communication errors.

APPENDIX

01. Power (Command: k a)

- To control Power On/Off of the TV.

Transmission

```
[k][a][ ][Set ID][ ][Data][Cr]
```

Data 00 : Power Off 01 : Power On
Ack

```
[a][ ][Set ID][ ][OK/NG][Data][x]
```

- To show Power On/Off.

Transmission

```
[k][a][ ][Set ID][ ][FF][Cr]
```

Ack

```
[a][ ][Set ID][ ][OK/NG][Data][x]
```

- * Similarly, if other functions transmit '0xFF' data based on this format, Acknowledgement data feed back presents status about each function.
- * OK Ack., Error Ack. and other messages may be display on the screen when TV is power On.

02. Aspect Ratio (Command: k c) (Main Picture Size)

- To adjust the screen format. (Main picture format)
You can also adjust the screen format using the **Aspect Ratio** in the PICTURE menu.

Transmission

```
[k][c][ ][Set ID][ ][Data][Cr]
```

Data 01 : Normal screen (4:3) 06 : Original
02 : Wide screen (16:9) 07 : 14:9
04 : Zoom1
05 : Zoom2 09 : Just Scan

Ack

```
[c][ ][Set ID][ ][OK/NG][Data][x]
```

- * Using the PC input, you select either 16:9 or 4:3 screen aspect ratio.
- * In **HDMI/Component** (over 720p) mode, **Just Scan** is available.
- * You can only select **Original** in UK digital teletext (MHEG-5).

03. Screen Mute (Command: k d)

- To select screen mute on/off.

Transmission

```
[k][d][ ][Set ID][ ][Data][Cr]
```

Data 00 : Screen mute off (Picture on)
01 : Screen mute on (Picture off)

Ack

```
[d][ ][Set ID][ ][OK/NG][Data][x]
```

04. Volume Mute (Command: k e)

- To control volume mute on/off.
You can also adjust mute using the MUTE button on remote control.

Transmission

```
[k][e][ ][Set ID][ ][Data][Cr]
```

Data 00 : Volume mute on (Volume off)
01 : Volume mute off (Volume on)

Ack

```
[e][ ][Set ID][ ][OK/NG][Data][x]
```

05. Volume Control (Command: k f)

- To adjust volume.
You can also adjust volume with the VOLUME buttons on remote control.

Transmission

```
[k][f][ ][Set ID][ ][Data][Cr]
```

Data Min : 00 ~ Max : 64

- * Refer to 'Real data mapping 1'. See page 95.

Ack

```
[f][ ][Set ID][ ][OK/NG][Data][x]
```

06. Contrast (Command: k g)

- To adjust screen contrast.
You can also adjust contrast in the PICTURE menu.

Transmission

```
[k][g][ ][Set ID][ ][Data][Cr]
```

Data Min : 00 ~ Max : 64

- * Refer to 'Real data mapping 1'. See page 95.

Ack

```
[g][ ][Set ID][ ][OK/NG][Data][x]
```

07. Brightness (Command: k h)

- To adjust screen brightness.
You can also adjust brightness in the PICTURE menu.

Transmission

```
[k][h][ ][Set ID][ ][Data][Cr]
```

Data Min : 00 ~ Max : 64

- * Refer to 'Real data mapping 1'. See page 95.

Ack

```
[h][ ][Set ID][ ][OK/NG][Data][x]
```

08. Colour (Command: k i)

- To adjust the screen colour.
You can also adjust colour in the PICTURE menu.

Transmission

```
[k][i][ ][Set ID][ ][Data][Cr]
```

Data Min : 00 ~ Max : 64

- * Refer to 'Real data mapping 1'. See page 95.

Ack

```
[i][ ][Set ID][ ][OK/NG][Data][x]
```

APPENDIX

09. Tint (Command: k j)

- To adjust the screen tint.

You can also adjust tint in the PICTURE menu.

Transmission

[k][j][][Set ID][][Data][Cr]

Data Red : 00 ~ Green : 64

* Refer to 'Real data mapping 1'. See page 95.

Ack

[j][][Set ID][][OK/NG][Data][x]

10. Sharpness (Command: k k)

- To adjust the screen sharpness.

You can also adjust sharpness in the PICTURE menu.

Transmission

[k][k][][Set ID][][Data][Cr]

Data Min : 00 ~ Max : 64

* Refer to 'Real data mapping 1'. See page 95.

Ack

[k][][Set ID][][OK/NG][Data][x]

11. OSD Select (Command: k l)

- To select OSD (On Screen Display) on/off when controlling remotely.

Transmission

[k][l][][Set ID][][Data][Cr]

Data 00 : OSD off 01 : OSD on

Ack

[l][][Set ID][][OK/NG][Data][x]

12. Remote control lock mode (Command: k m)

- To lock the front panel controls on the monitor and remote control.

Transmission

[k][m][][Set ID][][Data][Cr]

Data 00 : Lock off 01 : Lock on

Ack

[m][][Set ID][][OK/NG][Data][x]

* If you are not using the remote control, use this mode.
When main power is on/off, external control lock is released.

13. Balance (Command: k t)

- To adjust balance.

You can also adjust balance in the AUDIO menu.

Transmission

[k][t][][Set ID][][Data][Cr]

Data Min : 00 ~ Max : 64

* Refer to 'Real data mapping 1'. See page 95.

Ack

[t][][Set ID][][OK/NG][Data][x]

14. Colour Temperature (Command: k u)

- To adjust colour temperature. You can also adjust Colour Temperature in the PICTURE menu.

Transmission

[k][u][][Set ID][][Data][Cr]

Data 00: Medium 01: Cool 02: Warm

Ack

[u][][Set ID][][OK/NG][Data][x]

15. Abnormal State (Command: k z)

- To recognize an abnormal state.

Transmission

[k][z][][Set ID][][FF][][Cr]

Data FF : Read

Ack

[z][][Set ID][][OK/NG][Data][x]

Data 00: Normal (Power on and signal exist)

01: No signal (Power on)

02: Turn the monitor off by remote control

03: Turn the monitor off by sleep time function

04: Turn the monitor off by RS-232C function

05: 5V down

06: AC down

07: Turn the monitor off by Fan Alarm function

08: Turn the monitor off by Off time function

09: Turn the monitor off by Auto sleep function

a: Turn the monitor off by AV Board detect

* This function is "read only".

APPENDIX

16. Auto Configure (Command: j u)

- To adjust picture position and minimize image shaking automatically. It works only in RGB (PC) mode.

Transmission

[j][u][][Set ID][][Data][Cr]

Data 01: To set

Ack

[u][][Set ID][][OK/NG][Data][x]

* Real data mapping 1

00 : Step 0
 ...
 A : Step 10 (Set ID 10)
 ...
 F : Step 15 (Set ID 15)
 10 : Step 16 (Set ID 16)
 ...
 64 : Step 100
 ...
 6E : Step 110
 ...
 73 : Step 115
 74 : Step 116
 ...
 C7 : Step 199
 ...
 FE : Step 254
 FF : Step 255

* Real data mapping 2

00 :-40
 01 :-39
 02 :-38
 ...
 28 : 0
 ...
 4E : +38
 4F : +39
 50 : +40

17. Equalize (Command: j v)

- To adjust equalize.

Transmission

[j][v][][Set ID][][Data][Cr]

MSB LSB
 Data :

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|---|

 └─ Frequency ─┘ └─ Data ─┘

Frequency : 0 120 Hz
 1 200 Hz
 2 500 Hz
 3 1.2 kHz
 4 3 kHz
 5 7.5 kHz
 6 12 kHz

Step (Frequency data):
 Refer to 'Real data mapping 3' .See page 96.

Ack

[v][][Set ID][][OK/NG][Data][x]

* Equalize command expression

| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | Frequency |
|---|---|---|---|---|---|---|---|-----------|
| 0 | 0 | 0 | | | | | | 120Hz |
| 0 | 0 | 1 | | | | | | 200Hz |
| 0 | 1 | 0 | | | | | | 500Hz |
| 0 | 1 | 1 | | | | | | 1.2KHz |
| 1 | 0 | 0 | | | | | | 3KHz |
| 1 | 0 | 1 | | | | | | 7.5KHz |
| 1 | 1 | 0 | | | | | | 12KHz |

| | | | Step | | | | | OSD Value |
|---|---|---|------|----|----|----|----|-----------|
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | |
| | | | 0 | 0 | 0 | 0 | 0 | -24 |
| | | | .. | .. | .. | .. | .. | .. |
| | | | 0 | 1 | 1 | 1 | 1 | 0 |
| | | | .. | .. | .. | .. | .. | .. |
| | | | 1 | 1 | 1 | 1 | 1 | 24 |

Ex) If you wish to set frequency 500Hz and -20 value on menu OSD, refer to 'Real data mapping 3' and then find Step value for -20.

010 (500Hz)00011 (Step 3)=>01000011 =>43
 (Hexadecimal):[j][v][][Set ID][][43][Cr]

*3 bits of Frequency and 5 bits of Step makes 8 bits (1 byte). Change 8 bits to Hexadecimal code.

APPENDIX

18. Tune Command (Command: m a)

- Select channel to following physical number.

Transmission

[m][a][][Set ID][][Data0][][Data1][][Data2][Cr]

Data 00 : High channel data

Data 01 : Low channel data

ex. No. 47 -> 00 2F (2FH)

No. 394 -> 01 88 (188H),

DTV No. 0 -> Don't care

Data 02 : 0x00 : ATV, 0x10 : DTV, 0x20 : Radio

Channel data range

Analogue - Min: 00 ~ Max: 63 (0~99)

Digital - Min: 00 ~ Max: 3E7 (0~999)

Ack

[a][][Set ID][][OK/NG][Data][x]

Data Min: 00 ~ Max: 7DH

19. Channel Add/Skip (Command: m b)

- To set skip status for the current Programme.

Transmission

[m][b][][Set ID][][Data][Cr]

Data 00 : Skip

01 : Add

Ack

[b][][Set ID][][OK/NG][Data][x]

20. Key (Command : m c)

- To send IR remote key code.

Transmission

[m][c][][Set ID][][Data][Cr]

Data Key code - Refer to page 89.

Ack

[c][][Set ID][][OK/NG][Data][x]

21. Control Backlight (Command: m g)

- To Control the backlight.

Transmission

[m][g][][Set ID][][Data][Cr]

Data : Min: 00 ~ Max: 64 (*transmit by hexadecimal code)

Ack

[g][][Set ID][][OK/NG][Data][x]

22. Input select (Command: x b) (Main Picture Input)

- To select input source for main picture.

Transmission

[x][b][][Set ID][][Data][Cr]

Data Structure

| MSB | | | | LSB | | | |
|--------------------|---|---|---|------------------|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| └ External Input ┘ | | | | └ Input Number ┘ | | | |

| External Input | | | | Data |
|----------------|---|---|---|-----------|
| 0 | 0 | 0 | 0 | DTV |
| 0 | 0 | 0 | 1 | Analogue |
| 0 | 0 | 1 | 0 | AV |
| 0 | 1 | 0 | 0 | Component |
| 0 | 1 | 1 | 0 | RGB |
| 1 | 0 | 0 | 0 | DVI |
| 1 | 0 | 0 | 1 | HDMI |

| Input Number | | | | Data |
|--------------|---|---|---|--------|
| 0 | 0 | 0 | 0 | Input1 |
| 0 | 0 | 0 | 1 | Input2 |
| 0 | 0 | 1 | 0 | Input3 |

Ack

[b][][Set ID][][OK/NG][Data][x]

* Real data mapping 3(Equalize)

| Step : OSD | Step : OSD |
|------------|------------|
| 00 : -24 | 16 : 1 |
| 00 : -23 | 17 : 3 |
| 00 : -21 | 18 : 4 |
| 00 : -20 | 19 : 6 |
| 00 : -18 | 20 : 7 |
| 00 : -16 | 21 : 9 |
| 00 : -15 | 22 : 10 |
| 00 : -13 | 23 : 12 |
| 00 : -12 | 24 : 13 |
| 00 : -10 | 25 : 15 |
| 00 : -8 | 26 : 16 |
| 00 : -7 | 27 : 18 |
| 00 : -5 | 28 : 19 |
| 00 : -4 | 29 : 21 |
| 00 : -2 | 30 : 22 |
| 00 : 0 | 31 : 24 |

When does switchover happen?

*Copeland switches on October 17, 2007

The exact date you switch depends on the transmitter you are served by. To check when you switch, go to Digital UK's postcode checker on www.digitaluk.co.uk

Check your ITV news service or look at Teletext page 106 to see what TV region you're in.

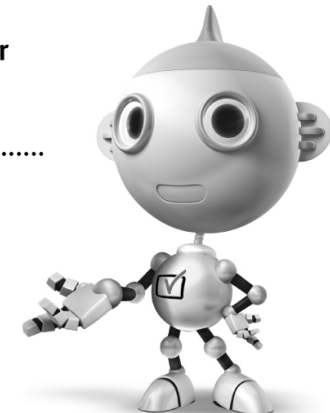


Visit us at digitaluk.co.uk call us on 0845 6 50 50 50*

*Calls charged at BT rate of 3p per minute daytime and 1p per minute evenings and weekends. Rates may vary for calls from non-BT lines.

Keep this important information about how to re-tune your TV during the digital TV switchover

Keep this leaflet and your instruction manual safe – you'll need them



get set for digital 

Television in the UK is going digital, bringing us all more choice and new services. Starting in late 2007 and ending in 2012, television services in the UK will go completely digital, TV region by TV region.

Please see overleaf to find out when your area switches to digital.

Digital UK is the independent, non-profit organisation leading the process of digital TV switchover in the UK. Digital UK provides impartial information on what people need to do to prepare for the move to digital, and when they need to do it.

How the switchover affects your TV equipment:

Your new TV has a digital tuner built in, which means it is ready to receive the Freeview signal by simply plugging it into your aerial socket (check if you can get digital TV through your aerial now, or whether you'll have to wait until switchover, at **www.digitaluk.co.uk**).

When the TV switchover happens in your area, there are at least two occasions when you will need to re-tune your TV in order to continue receiving your existing TV channels, and also to pick up new ones. Digital UK, the body leading the digital TV switchover, will advise you when you need to re-tune during the switchover.

If you choose to connect your TV to satellite or cable with a digital box then it will not be affected by switchover, and you won't need to re-tune.

How to re-tune:

To find out how to re-tune your TV, check your manufacturer's instructions for details. Or see below for a typical sequence:

1. With your TV in digital TV mode, press 'Menu' on your remote control. (Some TVs will ask you for a code. If you have not already changed it, the default code is usually 0000, or check your instruction book.)
2. From the Menu options on screen, select 'SETUP'. Select 'Auto Tuning'* to re-tune your digital TV (not 'add channels'). You may have to wait a couple of minutes for the re-tune to complete.

*Also sometimes referred to as 'Update', 'Rescan', 'Replace', 'Auto-Tuning', 'Channel Search', 'First Time Install', or 'Store Channels'.

3. If you do not re-tune your channels when advised to do so by Digital UK, you may lose some or all of your channels until you do re-tune. You should re-tune your TV every few months to check for any new channels.

If you are missing any channels, it may be that they are not available in your area, or that your aerial needs upgrading.

If you have any questions, please contact your equipment supplier or call Digital UK on **0845 6 50 50 50** or visit **www.digitaluk.co.uk**

LG Electronics Inc.